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UNIVERSITY OF ALBERTA

DEVELOPMENT OF A SCALE TO MEASURE PEER ATTITUDES TOWARD STUTTERING CHILDREN

BY

MARILYN JEANNETTE MACEACHERN

A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the requirements for the degree of Master of Science.

IN

SPEECH-LANGUAGE PATHOLOGY

DEPARTMENT OF SPEECH PATHOLOGY AND AUDIOLOGY

Edmonton, Alberta
Fall, 1991

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled "Development of a Scale to Measure Peer Attitudes Toward Stuttering Children", submitted by Marilyn Jeannette MacEachern in partial fulfillment of the requirements for the degree of Master of Science.

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BIRENDRA SINHA

Date: Oct. 4, 1991

DEDICATION

TO MY FAMILY AND FRIENDS -

THANK YOU FOR YOUR INTEREST, ENCOURAGEMENT AND SUPPORT.

TO MY HUSBAND BLAKE -

YOU GAVE UNCONDITIONAL SUPPORT AND LOVE

WHICH WAS MY FOUNDATION.

I DEDICATE THIS TO YOU

WITH MY DEEPEST LOVE AND APPRECIATION.

ABSTRACT

A scale to measure peer attitudes toward stuttering children was developed. A pool of 116 items was devised to represent affective, cognitive and behavioral components of attitude. After selectional processes, 55 items were retained for a pilot scale. The pilot scale was administered to a 5th grade class. After item analysis and measures of internal consistency were computed, 40 items were selected for a revised attitude scale. The revised attitude scale was administered to 267 subjects in grades 4, 5 and 6. Item analysis revealed that all items had item-total score correlations of above .25. According to Jackson (1988) items with item-total score correlations of above .25 are good items for an index. Measures of internal consistency for the total revised scale and affective, cognitive and behavioral intent subscales were .9631, .9216, .8472 and .9482 respectively. Analyses of variance revealed significant differences in grade, with 5th and 6th grade subjects having significantly higher scores (more positive) than 4th grade subjects, and contact, with subjects who had contact with someone who stutters having significantly higher scores than those who did not. No significant differences by sex were found. Factor analysis revealed the emergence of three content-defined dimensions rather than dimensions reflecting affective, cognitive and behavioral intent components of attitude. Factors more appropriately represented dimensions reflecting social distance (Factor 1), verbal interaction characterized by frustration (Factor 2), and social pressure associated with concern about what others think about stuttering children (Factor 3). Options for final scale construction were explored. A Peer Attitudes Toward Stuttering Children-40 (PATSC-40) scale utilizing all 40 items tested in the revised scale appears to be a viable scale for measuring peer attitudes. Cross validation and test re-test reliability need to be carried out to confirm the validity and reliability of the PATSC-40. Two alternate forms were also devised--PATSC-20 Form A and PATSC-20 Form B. Further validity and reliability testing are required for both forms.

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CHAPTER I: INTRODUCTION

There is a growing body of literature that supports a neurophysiological basis for stuttering (for overviews see Andrews et al., 1983; Moore & Boberg, 1987; Rosenfield & Nudelman, 1987; Starkweather, Armson & Amster, 1987; Webster, 1985, 1986). Research has focused on laryngeal dynamics (Adams, Freeman, & Conture, 1984), articulatory dynamics (Zimmerman, 1984), aspects of temporal programming (Kent, 1984) and characteristics of the central nervous system (Moore, 1984). Even though difficulties are observed at the laryngeal level, it is likely that the problem originates in the higher neurophysiological centers (Boberg, 1986). As yet, the nature and location of deficits are unknown. Evidence supporting a genetic component to stuttering has also been provided. Kidd (1984) argued that "an inherited neurologic susceptibility underlies most cases of stuttering" (p.149). Although genetic and neurophysiological factors may underlie stuttering, they do not act alone. There is consensus that they interact with environmental factors to produce stuttering (Gregory, 1986a; Riley & Riley, 1988)

Researchers and clinicians have long recognized that environmental factors play a significant role in the development of stuttering. Stuttering has been described as "a behavioral response of a living, feeling, reacting individual who is operating in some form of socially interactive system with other people" (Shames & Egolf, 1976, p. 14-15). Murphy and Fitzsimons (1960) viewed stuttering as being rooted in a child's interpersonal relationships and early socialization experiences. Sheehan (1970) characterized stuttering as a role-specific behavior involving the speaker and listener. "Just as it takes two to tango, it takes two to stutter. A listener, as well as a speaker, is required" (Sheehan, 1970, p. 4).

Riley and Riley (1979, 1988) supported a model of stuttering which included the interaction between environmental variables and a child's vulnerable physiological system. Pressures put on a child's vulnerable system by parents, siblings and peers may stress the system beyond its threshold of fluency (Riley & Riley, 1988). Kidd (1983) stated that "recent theories suggest stuttering is a product of hereditary predisposition and environmental precipitating factors" (p. 205). Starkweather (1987) posited that stuttering will begin when the environment demands more fluency than the child can produce. Gregory (1986b) supported the hypothesis that broader cultural patterns and/or attitudes and reactions of individual parents are significant determinants of stuttering. It is the premise of this study that peer attitudes and reactions are also significant determinants of stuttering.

The quality of peer interactions affects the academic achievement, socialization and healthy development of children (Johnson, 1981). Stuttering children are known to have deficits in these areas. It is likely that these deficits are, in part, manifestations of negative interactions between stuttering and non-stuttering children.

Academic retardation was found for stuttering boys of normal intelligence by Williams, Melrose, and Woods (1969). Andrews et al. (1983) reported that stuttering children lagged 6 months behind their peers in educational achievement. Bloodstein (1987, p. 239) stated that "mild degrees of educational maladjustment...appear to be more common among stutterers". Anecdotal evidence from stuttering children, parents and teachers suggests that academic achievement is often compromised. Children have been known to feign ignorance of an answer to avoid stuttering in front of the class, or feign illness to avoid giving an oral presentation at school.

Andrews et al. (1983) reported that stuttering children were found to score a half standard deviation below non-stuttering children on intelligence tests. The question arises whether the lag in educational achievement of stuttering children is a manifestation of lower intelligence or a consequence of negative stuttering experiences in the school setting? Before any conclusions can be made, researchers must critically evaluate the quality of the studies cited by Andrews et al. (1983) in support of the contention that stuttering children score significantly below non-stuttering children on intelligence tests. This investigator adopted Bloodstein's (1987) assumption that "mild degrees of educational maladjustment...[are] a reflection of the consequences of stuttering in a school setting" (p. 239).

Social maladjustment in stuttering children and adults is often observed in the clinical setting. "Stutterers on the average are not quite as well adjusted as are typical normal speakers" (Bloodstein, 1987, p.208), particularly in social adjustment as compared to other areas of emotional health. Indeed, as Boberg and Calder (1977) indicated:

> It is in social development that the stutterer faces the greatest obstacle. Every verbal interaction carries the threat of embarrassment, humiliation and even pity. It is difficult for normal speakers to appreciate the profound impact that this disorder can have on a child's self concept, his role and his style of life. (p. 144)

Research indicates that stutterers tend to be low in assertiveness (Sermas & Cox, 1982), self-esteem and willingness to risk failure (Bloodstein, 1987). Okasha, Bishry, Kamel, and Hassan (1974) found that stuttering children were more introverted than controls.

To what can mild social maladjustment be attributed? This investigator believes that social maladjustment seen in stuttering children arises from the "eventual influence of the stuttering itself" (Bloodstein, 1987, p. 208), and that "certain environmental influences contributing to the development of stuttering are of a type that may also sometimes contribute to insecurity and maladjustment" (Bloodstein, 1987, p. 208).

Research findings, clinical observations, and anecdotal evidence indicate that the academic achievement, socialization and healthy development of stuttering children are often compromised. It is likely that negative peer interactions between stuttering and non-stuttering children constitute some of the "environmental influences" that contribute to difficulties experienced in these areas. The role of peers in the development and treatment of stuttering must not be ignored. The importance of examining the effects of stuttering on peer relationships was recognized by Bloch and Goodstein in 1971, however little has been done since then.

In view of the compromised academic and social development of stuttering children and the belief that peer attitudes and reactions can be significant determinants of stuttering, it is apparent that peer education is needed. Researchers have recognized that education may be a key to improving peer attitudes toward stuttering children and adults.

After examining store clerks' reactions to stuttering, McDonald and Frick (1954) contended that a public education program designed to increase the understanding of stuttering was required. On finding that contemporary college students continued to hold negative stereotypes of stuttering children and adults, Ruscello, Lass and Brown (1988) indicated that "until the general public understands the stuttering problem, individuals with fluency disorders will continue to be perceived in a manner that is totally unfounded and yet widespread" (p. 118). Ruscello et al. called for the development of informational programs to educate school-age children about persons with fluency disorders. There appears to be a virtual absence of research dedicated to the development and evaluation of peer education programs.

The development and evaluation of educational programs must be guided by objective data on peers' beliefs and feelings about stuttering children and peers' behavioral tendencies toward stuttering children. Three possible methods of intervention and related assessment strategies were considered. Educational programs could be informational, experiential, or a combination of both. Informational programs targeting attitude modification would allow paper and pencil data collection. Experiential programs utilizing behavioral modification would require behavioral observations. The third possibility would involve a combination of both data collection methods.

The decision to focus on peer attitudes with paper and pencil data collection rather than experiential intervention with behavioral observation was based on practical factors and theoretical assumptions. Experiential programs with direct observation of overt peer behavior in schools would be an unwieldy and costly undertaking. In addition, the reliability of direct observation is generally lower than well constructed attitude scales (Mueller, 1986). Paper and pencil attitude scales, and corresponding attitude modification intervention, could more readily be incorporated into the curricula of a large number of school children. Also, to the extent that attitudes predispose favourable or unfavourable behavioral responses, attitude modification programs should result in improved peer attitudes toward stuttering children and healthier interactions.

Research questions, some of which were raised by Horne (1985) regarding peer attitudes toward physically and mentally handicapped children, include the following: What is the nature of peer attitudes toward stuttering children? How can peer attitudes best be modified? What attitudinal dimensions should be targeted? How effective are attitude intervention programs? At what stage in peer development should attitude change be attempted? Are attitudinal changes maintained over time? To investigate any one of these research questions, a valid and reliable attitude scale is required. The paucity of research regarding peer attitudes toward children who stutter may be due in part to the lack of valid and reliable instruments with which to assess peer attitudes. The purpose of this study is to construct empirically a scale to measure peer attitudes toward stuttering children.

CHAPTER II: LITERATURE REVIEW

To establish support for the development of an attitude scale to measure peer attitudes toward stuttering children, this review will examine peer-focused research in the stuttering and other speech disorder literature. This review is limited to studies which specified that stuttering children were included in the reference group. The reactions of stuttering children to their stuttering will also be reviewed. It is believed that there is a relationship between the reactions of peers and the reactions of stuttering children to stuttering.

For direction on theoretical and methodological issues of scale construction and evaluation, the literature on attitude scale construction and peer attitudes toward physically and mentally handicapped children was consulted. These bodies of literature are vast and clearly beyond the scope of this study. This review is limited to a summary of (a) the definition and conceptual models of attitude, (b) possible scaling methods, and (c) determinants of childrens' attitudes. The reader is referred to Mueller (1986) for an overview of scaling methods, to Mueller (1986) and Ajzen (1988) for an overview of the definition of attitude, and to Horne (1985) for a review of peer attitudes toward handicapped students.

Peer Focused Research

Attitudes toward persons who stutter have been investigated from the perspective of parents (Darley, 1955; LaFollette, 1956; Crow & Cooper, 1977), teachers (Crowe & Walton, 1981; Emerick, 1960; Horsely & Fitzgibbon, 1987) and speech clinicians (Cooper & Cooper, 1985; Cooper & Rustin, 1985; Horsely & Fitzgibbon, 1987; Ruscello, Lass, French & Channel, 1989-1990; St. Louis & Lass, 1981; Turnbaugh, Guitar & Hoffman, 1979; Woods & Williams, 1971; Yairi & Williams, 1970), but little has been done from the perspective of peers.

Peer based research has focused on (a) peers' awareness of and reactions to stuttered speech, (b) peers' acceptance of stuttering children inferred from studies on the social status of heterogeneous groups of speech defective children (Marge, 1966; Perrin, 1954; Woods & Carrow, 1959), and (c) peer acceptance of stuttering boys (Woods, 1974).

Peer Awareness of and Reactions to Stuttered Speech

Using adult recordings of fluent and stuttered speech as stimuli, Giolas and Williams (1958) found that kindergarten children did not label stuttered speech as stuttering whereas many of the 2nd grade children did. Giolas and Williams (1958) also found that both groups of children preferred the fluent speech pattern. Norbut

(1976) found that children in kindergarten and grades 2, 4 and 6 readily differentiated fluent from disfluent speech and developed perceptual sets for good speech early. Disfluencies were unacceptable even in the early years. Using adult recordings of fluent and stuttered speech as stimuli, Culatta and Sloan (1977) found that children in grades 1 and 2 were aware of differences in fluency but did not label disfluent speech as stuttering, whereas children in grades 3 and 4 began to label disfluent speech as stuttering. Almost all children preferred the fluent sample. These results supported the earlier results of Giolas and Williams (1958) and Norbut (1976).

Severity of stuttering differentially affects childrens' reactions. Using recordings of a 9 year old fluent male simulating mild, moderate and severe stuttering as stimuli, Langer (1969) found that pre-school children did not react negatively to mild stuttering but did so to moderate stuttering and showed increasingly negative reactions as stuttering severity increased.

These studies indicated that although children become aware of stuttering relatively young, they do not begin to label disfluent speech as stuttering until the 2nd or 3rd grade. It was also evident that children develop preferences for fluent speech quite early.

Social Status of Speech Defective Children

Perrin (1954) examined the social position of speech defective children having articulation, voice and fluency disorders. Subjects were 445 children in grades 1 to 6, of which 37 had speech defects. Most of the speech-defective children had articulation problems, a few stuttered and two had voice problems. A three item questionnaire, designed to determine each subjects' best friends, was administered to non-defective children in their regular classrooms and to 3rd, 4th, and 5th grade speech defective children in their speech correction classes. Subjects were asked to identify three children with whom they would best like to (1) play, (2) work, and (3) sit beside. Subjects were considered isolates if they received one or no votes, neglectees if they received 2 to 4 votes and stars if they received 20 or more votes. Perrin (1954) found that there were one third more isolates and more than half again as many neglectees among the speech defective children as compared to the non-defective children and the total of all children. There were no stars among the speech defective children. Five speech defective children received the majority of their votes from fellow members of their speech correction class. When these votes were removed, the percentage of isolates and neglectees among the speech defective children rose. Perrin (1954) postulated that the degree of acceptance of speech-defective children may have been inflated by votes received from fellow speech defective children.

Perrin (1954) also found that the percentage of isolates among the speech defective, non-defective and total number of children remained fairly constant from grade to grade with the exception of grade one in which there were almost four times as many isolates among speech defective versus non-defective children. Thus grade one subjects were more rejecting of their speech defective peers.

Woods and Carrow's (1959) investigated the social position of speech defective children on the criteria of play, work and friendship. Subjects included 1524 children in grades 2 to 5, of which 96 were receiving treatment for speech disorders. Speech defective children had mild, moderate and severe degrees of voice, articulation, dysarthria and rhythm disorders. Subjects were asked to choose three children with whom they would and three children with whom they would not like to (1) play, (2) work (or study), and (3) have in their classroom next year (intended to index friendship). The choice-rejection status of each subject on each criterion was determined by an mathematical formula. A higher score represented a higher social position. Woods and Carrow (1959) found that speech defective children had significantly lower scores than non-speech defective children on the criteria of play and friendship, but not on the work criterion. No significant differences were found among grades and there was no interaction between grade and presence or absence of a speech defect. Woods and Carrow (1959) suggested that the significance of acceptance in the work domain versus play and friendship must be viewed through the eyes of children. Regardless of apparent acceptance as work-mates, Woods and Carrow (1959) posited that speech defective children may be excluded as playmates and friends because they may not conform to peer values of adequacy and conformity on the playground. These results partially agreed with those of Perrin (1954) which indicated that there were more isolates and neglectees among speech defective children than non-defective children.

Marge (1966) also examined the social status of speech defective children on specific criteria. Subjects were 197 third grade children, of which 36 had moderate to severe articulation, voice and fluency disorders. Subjects were asked to name three children in their class with whom they liked to (1) work or study at school, (2) have on their team for games on the playground, (3) take home for dinner, and (4) have speak for them all day in school, at play and at home (general speaking skill). Social popularity categories were used to interpret results. Categories were: stars (an individual who receives the greatest number of choices); better than average; less than average; and unchosen. On the criteria of work and desirability as a dinner guest, Marge (1966) found that speech defective children had a significantly lower social position than normal speaking children, but there were no significant differences on the criteria of play and general speaking skill. These findings both support and contrast with those of Woods and Carrow (1969). On the play criterion Woods and Carrow (1969) found that speech defective children had lower choice rejections scores than non-defective children, whereas Marge (1966) found no significant differences between the groups. On the criterion of work Woods and Carrow (1959) found that there was no significant difference between speech defective and non-defective children, but Marge (1966) found a significant difference.

The studies of Perrin (1954), Woods and Carrow (1959) and Marge (1966) revealed that speech defective children, which included stuttering children, tended to have lower social positions than non-handicapped children.

Social Status of Stuttering Children

Only one study was found which researched the social status of stuttering children. Woods (1974) assessed the acceptance of stuttering children by non-stuttering peers and the stuttering childrens' self ratings of acceptance. Subjects were 272 normally fluent and 24 stuttering males in grade 3, and 290 normally fluent and 24 stuttering males in grade 6. Half of the stuttering males in each grade had mild stuttering and half had moderate or severe stuttering. A modified Ohio Social Acceptance Scale (Fordyce, Yauch, &

Rath, 1946, cited in Woods, 1974) was utilized. Subjects rated each classmate according to whether the classmate was (1) a very, very best friend, (2) an other friend, (3) not known well, or (4) or not liked by the subject. Subjects also rated themselves, using the same choices, as to how they thought most children in their class felt about them. A social position score was determined by summing the ratings received and dividing that number by the number of children who rated the subject. Scores computed for each subject which are relevant here were (1) the mean peer rating of social position, and (2) the self-estimate of social position. No significant differences in mean peer ratings or mean self-estimates between stuttering and fluent boys were found, thus no differences attributable to stuttering were revealed. But, a significant difference in peer rating and self-estimates between grades was found. Grade 3 boys gave significantly better ratings (lower scores) than grade 6 boys.

Ratings given to stuttering boys only, grouped by grade and severity, were converted into percentile ranks. Ranges of percentile ranks revealed that stuttering boys could hold almost any social position in their classroom.

Results indicated that stuttering boys were not and did not expect to be rated differently on the criterion of social position. Woods (1974) concluded that the social positions of stuttering children were probably no better or worse than those of their classmates.

Wood's (1974) findings are surprising. They contradict earlier findings that speech defective children, including stuttering children, are less accepted socially than normally speaking children (Perrin, 1954; Marge, 1966; Woods & Carrow, 1959). It is possible that these divergent findings are attributable to differing measurement techniques.

Perrin (1954), Woods and Carrow (1959) and Marge (1966) used peer nomination sociometric procedures in which subjects were asked to choose 3 peers for companions on specific criteria. Woods (1974) used a roster-rating method in which subjects were provided with a class list and were asked to rate each classmate according to whether the classmate was a very, very best friend, an other friend, not known well, or not liked. The roster-rating method has advantages over peer nomination techniques in that it controls for students being eliminated as choices due to forgetfulness and it more accurately measures the relative status of each class member (Horne, 1985). In spite of the advantages of the roster-rating method, Woods' (1974) study was weakened by asking questions and obtaining responses which were less valid.

> According to Moreno (1934), valid responses are most likely to be obtained when realistic criteria are specified; asking students to name classmates they like best or to name their best friends would not be considered a sociometric question, but rather a less valid "near-sociometric" question. (Horne, 1985, p.

39).

It appears that a preferred design might have been to use roster-rating techniques with ratings on specific criteria, eg. play, work and friendship.

Reactions of Stuttering Children

Insight into the reactions of stuttering children and the relationship between their reactions and those of their peers can be gleaned from the following: (a) research on the reactive features of stuttering; (b) research on the communication attitudes of stuttering and non-stuttering children; and (c) clinical and anecdotal evidence illustrating the effects of peer teasing. These issues will be reviewed and related to research regarding the degree to which stuttering is of concern to stuttering children.

Reactive Features

Bloodstein (1960) provided information on the reactive features of stuttering which included difficult words or sounds, anticipation, word substitution and speech avoidances. Data indicated that whereas no 2-7 year olds showed word or sound fears (difficult words or sounds), anticipation, or word substitutions, 82% of 8-9 year old children showed word or sound fears, 38% showed anticipation, and 48% exhibited word substitutions. The percentages of children evidencing avoidance behaviors rose from 5% at 4-5 years, to 11% at 6-7 years and 17% at 8-9 years.

The period between 8-9 years seems to be a critical time in the development of stuttering. Bloodstein's (1960) data show a dramatic increase in reactive features of stuttering between the ages of 8 and 9 years. This exacerbation of stuttering coincides with the age at which children begin to label disfluent speech as stuttering. Culatta and Sloan (1977) found that children in grades and 3 and 4 began to label disfluent speech as stuttering. The combined mean age for Culatta and Sloan's (1977) 3rd and 4th grade subjects was 9.3 years, with the mean ages of females and males being 8.6 and 9.2 years respectively. Giolas and Williams (1958) found that children in grade 2 began to label disfluent speech as stuttering. The age range for Giolas and Williams' (1958) kindergarten and 2nd grade subjects was 5 years, 5 months to 8 years. It is speculated that those subjects who labelled disfluent as stuttering were at or approaching the upper end of the age range.

Attempts to hide stuttering with word substitutions and speech avoidances are likely, in part, reactions to negative verbal and nonverbal reactions of peers. A correlation between the increase in reactive features of stuttering and the labelling of disfluent speech as stuttering seems apparent, however, an empirical investigation is needed to confirm this hypothesis.

Communication Attitudes

De Nil and Brutten (1991) investigated the communication attitudes of stuttering and nonstuttering children. A Dutch version of the Communication Attitude Test (CAT-D) was administered to 63 male and 7 female Belgian children who stuttered and to 271 non-stuttering Belgian children. The age range for both groups was 7 to 14 years. It was found that stuttering subjects' attitudes were significantly more negative than those of the non-stuttering subjects across all age levels. Attitudes of stuttering subjects also became more negative as age increased. An opposite trend was observed in the non-stuttering subjects. These results provided evidence that "even young children already have developed a relatively firm negative self-concept about their communicative abilities" (De Nil & Brutten, 1991, p. 64). De Nil and Brutten (1991) remarked that negative attitudes toward speech may be related to the nature and frequency of negative speech experiences.

Reactions to Teasing

Anecdotal and clinical evidence shows that the majority of stuttering children are teased about stuttering. The anguish felt is often not revealed until communicative success has been achieved in therapy and attitudinal issues have been explored. In the initial assessment, children frequently deny that teasing occurs or is troublesome and parents are often unaware that their child is being teased at school. In a recent intensive therapy program for children at the Institute for Stuttering Treatment and Research (ISTAR), in Edmonton, Alberta, 10 children, aged 6 to 10 years, were seen for 4 weeks of stuttering therapy. The entire range of severities was represented. In the initial assessment and parent interview, parents of 4 children indicated that they were not aware of teasing at school. The parent of a 5th child was aware that there had been some teasing but thought it was minimal. None of the 5 children reported that teasing was a problem. After three weeks of therapy all 5 children revealed that teasing had been a significant problem. In discussing feelings they reported feeling "mad, let down, low, and disappointed". In discussing coping strategies, the children reported maladaptive reactions which included acts of partial or complete withdrawal from the communicative or social situation, and acts of aggression. One child reportedly escaped teasing peers at school by hiding behind doors. Although several of the parents reported that they openly discussed stuttering with their child, it appeared that these stuttering children had already become entrenched in the "conspiracy of silence" (E. Boberg, personal communication, 1988) that surrounds discussion of stuttering and its associated negative experiences and feelings. The experiences and reactions of these 5 children provided persuasive evidence of the negativity they encountered in some peer interactions and the impact of negative peer reactions on their behaviors and thoughts.

Concern About Stuttering

The empirical findings of Bloodstein (1960) and De Nil and Brutten (1991), together with anecdotal and clinical evidence that teasing is often a major problem in school, contradict Bloodstein's (1987) assertion that many stuttering school children do not seem to be highly concerned about stuttering. In support, Bloodstein (1987) cited the findings of Silverman (1970) and Culatta, Bader, McCaslin and Thomason (1985). In these studies stuttering children were asked to make three wishes that a fairy godmother could grant. Silverman (1970) found that only 4 of the 62 second to fifth grade children, whose severities ranged from mild to severe, made wishes that were related to speech. Culatta et al. (1985) found that none of the 12 primary level (including kindergarten to grade 6) subjects, whose severities ranged from mild to severe, responded with wishes related to communication. Culatta et. al (1985) also asked subjects to identify any three things they might like to change about themselves. Only one child responded with a wish to no longer stutter as a second part of his third wish. Silverman (1970) and Culatta et al. (1985) concluded that stuttering children in elementary grades do not seem to be highly concerned about their stuttering, particularly those below the 4th grade (Silverman, 1970).

Problems with the research methodology used by Silverman (1970) and Culatta et al. (1985) may account for their contradictory findings. Asking a child to make three wishes that a fairy godmother could grant allows a rather broad response set. It is not surprising that the children typically responded with desires for material objects. More importantly, not verbalizing a desire to be relieved of one's stuttering problem is not tantamount to being unconcerned about stuttering.

Summary and Integration of Peer Focused Research and Reactions of Stuttering Children

It appears that children become aware of stuttering relatively young, but do not label disfluent speech as stuttering until they reach the age of 8-9 years. Children also prefer fluent versus stuttered speech and seem to react more negatively to stuttered speech as stuttering severity increases.

Inconsistencies were revealed in the literature on the social position of speech defective children and stuttering children. Wood's (1974) finding that there was no significant difference in the social position of stuttering versus non-stuttering boys is in direct variance with those of Perrin (1954), Woods and Carrow (1959) and Marge, (1966). These studies showed that speech defective children were less accepted socially. Differing methods of measurement may account for the divergent findings.

Contradictions regarding the reactions of stuttering children and their concern about stuttering were also apparent. Persuasive empirical, anecdotal, and clinical evidence was presented that opposed assertions that stuttering children are not highly concerned about stuttering. This evidence included the following: (a) the co-occurrence of an increase in reactive features of stuttering and the labelling by peers of disfluent speech as stuttering (both occurring between 8 and 9 years); (b) the existence of significantly more negative communication attitudes among stuttering versus non-stuttering children (De Nil & Brutten, 1991); and (c) the maladaptive coping reactions of stuttering children to peer teasing. This evidence also supports contentions that there is a strong relationship between the reactions of stuttering children and the reactions of their peers, that peer interactions are often negative, and that negative peer attitudes exist which contribute to the perpetuation and exacerbation of stuttering.

Theoretical and Methodological Scale Construction Issues

To ensure that scale construction proceed systematically within well defined boundaries, a conceptual model of attitude was chosen to govern item generation, selection, and assignment to subscales. A scaling method was chosen to quantify attitudes. Methods for demonstrating construct validity were considered and known trends and differences in childrens' attitudes based on sex, age or grade and contact were selected as criteria for evaluating construct validity.

Conceptual Model of Attitude

Attitude is an hypothetical construct inferred from measurable responses that reflect positive or negative evaluations of the attitude object (Ajzen, 1988).

Many definitions of attitude have been formulated -- "almost as many, in fact, as there are theorists in the attitude arena" (Mueller, 1986, p. 3). Definitions have indicated that an attitude is a mental and neural state of readiness to respond (Allport, 1935), a tendency to react with some degree of affect for or against an object (Anastasi, 1968; Ostrom, 1969), a learned predisposition to respond (Ostrom, 1969) in a consistent, predictable manner

(Green, 1954), which may be conscious or unconscious, verbal or proprioceptive and which mediates other responses (Doob, 1947).

Although definitions vary, Ajzen (1988) posited that most social psychologists agree that the evaluative aspect (pro-con, pleasant-unpleasant) is a critical component of the attitude concept. Definitions embraced by contemporary theorists range from those that are based singularly on an evaluative tenet to those that are multidimensional. Mueller (1986) adopted Thurstone's (1931) definition which stated that "attitude is the affect for or against a psychological object" (Thurstone, 1931, p. 261, cited in Mueller, 1986, p. 3). Ajzen (1988) supported a hierarchical, tripartite model (Ostrom, 1969; Rosenberg & Hovland, 1960; Triandis, 1971) which is the model adopted in this study. In this multidimensional model evaluative attitude is at the highest level of abstraction with cognitive, affective and conative responses at an intermediate level. Each of these responses comprises a component of the attitude model. Each component is further made up of verbal and nonverbal responses and very specific response tendencies. The verbal or non-verbal responses are the indices of attitude which can be measured. A schematic of the hierarchical model is presented in Figure 1.

It should be noted that the conative component seems more widely referred to as the behavioral component or in some cases the behavioral-intent component. The reader is referred to Kothandapani (1971) and Siperstein (1980) for a review of the behavior versus behavioral intentions issue and to Cooper and Croyle (1984) for a discussion of the relationship between attitudes and actual behavior. Ajzen (1988) provided the following explanation for the way in which the hierarchical model of attitude affects behavior:

> The actual or symbolic presence of an object [eg. person, situation, social issues, political issues, etc.] elicits a generally favourable or unfavourable evaluative reaction, the attitude toward the object. This attitude, in turn, predisposes cognitive, affective and conative responses to the object, responses whose evaluative tone is consistent with the overall attitude. (p. 23)

Support for the discriminant validity of the tripartite model has been equivocal and there is controversy in the literature as to its utility. A factor analytic study by Woodmansee and Cook (1967) did not support the three-component model and Fishbein (1967) questioned its usefulness in predicting behavior. McQuire (1969) challenged theorists who supported the tripartite model to "bear the burden of proving that the distinction is worthwhile" (p. 157). Harding, Kutner, Proshansky and Chein (1954) and Fishbein (1966) suggested that the high degree of consistency between the components indicated that any one could be used in assessing attitudes.

Ostrom (1969) indicated that the three components are interdependent, yet each contributes unique determinants. Ostrom (1969), Kothandapani (1971) and Breckler (1984) provided evidence which supported a three component model. Bagozzi and Burnkrant's (1979) findings supported a two component model --cognitive and affective-behavioral--versus a single affective model. Ajzen (1988) stated that:

> Most of the data reported in the literature is quite consistent with the hierarchical model in that a single factor is found to account for much of the variance in attitudinal responses, and the correlations among measures of the three components, although leaving room for some unique variance, are typically of considerable magnitude. (p. 22)

Attempts to establish the validity of the tripartite model in the measurement of adults' attitudes have overshadowed efforts to confirm its discriminant validity in the measurement of childrens' attitudes. Although the tripartite model has been used in measuring peer attitudes toward handicapped children (Rosenbaum, Armstrong & King, 1986), it does not appear that studies specifically designed to validate the model have been carried out.

The tripartite model was employed in the development of the Chedoke-McMaster Attitudes Toward Children with Handicaps scale (Rosenbaum et al., 1986). Factor analytic results supported a two component model consisting of cognitive and affective-behavioral components which was consistent with Bagozzi and Burnkrant's (1979) findings. The work of Siperstein (1980) and associates in measuring children's attitudes toward the handicapped was also based on the tripartite model. The Adjective Checklist was designed to measure children's beliefs and feelings, and the

Activity Preference Scale was intended to measure behavioral intentions (Siperstein, 1980). Use of these and similar instruments has continued in the last decade (Siperstein, Bak & O'Keefe, 1988).

The empirical support of the tripartite model presented by Breckler (1984), Ostrom (1969) and Kothandapani (1971) and its use in development of instruments measuring peer attitudes toward handicapped children supported utilization of the tripartite model in this investigation.

The tripartite model was intended to guide generation and selection of items (or attitudinal statements) and creation of subscales. For the purposes of this study, attitudes are comprised of an affective component, reflected in verbal expressions of feelings, a cognitive component, reflected in verbal expressions of beliefs, and a behavioral intent component, reflected in verbal statements of behavioral intentions.

Although a definitive study of the discriminant validity of the tripartite model in measurement of childrens' attitudes is needed, this study was not intended to fill that apparent void in the literature. No attempt was made to meet Breckler's (1984) criteria for properly testing the discriminant validity of the model. The statistical methods employed in this study were intended to provide evidence of the construct validity of the tripartite model for the purposes of selecting items and defining subscales for a final version of the proposed attitude scale.

Scaling Method

The scaling methods considered included those of Likert (1932), Thurstone and Chave (1929) and Guttman (1944). Ostrom (1969) found that the equal-appearing interval (Thurstone & Chave, 1929) and the summated rating (Likert, 1932) scales were the most sensitive to the distinctiveness of the affective, cognitive and behavioral intent components of attitude. However, Kothandapani (1971) found that the Thurstone and Chave (1929) and Guttman (1944) methods were most sensitive. The extremely laborious nature of Thurstone scaling, which requires a minimum of 10 to 15 judges to sort or evaluate items, and the unidimensionality of Guttman scaling, which would require a separate scale for each attitudinal dimension (Mueller,1986), mitigated against choosing either of these scaling methods.

Likert (1932) scaling was chosen because it is possible to incorporate several dimensions of a construct in one scale, it generally has high reliability coefficients (Mueller, 1986), selection of items is made on the basis of responses of persons who represent the population on which the instrument will be used, and degrees of negativeness or positiveness can be expressed because the response scale is made up of varying levels of agreement ranging from strongly disagree to strongly agree. In addition, Likert scaling has been used in the measurement of childrens' attitudes (Rosenbaum et al., 1986, Voeltz, 1980, 1982).

Evaluating Construct Validity

Ventry and Schiavetti (1980) suggested ways in which construct validity of measurement instruments used in speech pathology and audiology can be established. In addition to determining the internal consistency of a test, or using factor analysis to determine how much a test shares in common with other tests measuring the same construct, Ventry and Schiavetti (1980) suggested the following:

> A theory might predict that a particular behavior should increase with age. The test or measure could be administered to persons of different ages, and if the measured behaviors were found to increase with age, the construct validity of the measure with respect to the age aspect of the theory would be established. The theory might also predict that different kinds of subjects (eg. pathological vs. normal) should score in certain ways. If empirical testing with the measure confirmed this, then the measure would have construct validity with respect to that aspect of the theory. (p. 99)

In addition to examining measures of internal consistency, the construct validity of the proposed attitude scale can be evaluated by examining the degree to which the scale scores agree with trends and differences revealed in the measurement of peer attitudes toward children with physical and mental handicaps. Factors which contribute to the development of childrens' attitudes toward disabled peers were identified by Rosenbaum, Armstrong and King

(1988). Those which are relevant to this study include sex, age or grade, and contact or friendship with person who stutters. Predictions about the scale's performance on these criteria were made on the basis of the following trends and differences revealed in the literature on peer attitudes toward handicapped peers.

Sex

A growing body of literature indicates that females demonstrate greater acceptance of handicaps than males (Horne, 1985). Siperstein, Bak and Gottlieb (1977) used an adjective checklist to measure childrens' attitudes toward handicapped peers. Subjects were 80 sixth grade students of which 48 were male and 32 were female. Analysis of variance revealed a significant main effect for sex with females having a more positive mean score than males. These findings were corroborated in investigations by Voeltz, (1980, 1982) and Rosenbaum et al. (1986). Voeltz (1980) used the Acceptance Scale to investigate attitudes of 2,636 children in grades 2 through 7 toward handicapped peers. Girls were significantly more accepting that were boys on each of the 4 factors which emerged. These results were substantiated in a subsequent study of students in grades 4, 5 and 6 using the same scale (Voeltz, 1982). In a more recent study, Rosenbaum et al. (1986) investigated the attitudes of 304 children in grades 5 to 8 using the

Chedoke-McMaster Attitudes Toward Children with Handicaps scale. Analysis of variance revealed that females scored significantly higher than males on all three factors of the scale. Thus, females had more positive attitudes than males.

Age/Grade

Early childhood attitudes toward the physically disabled tend to follow a developmental trend with early childhood attitudes being less favourable than attitudes of adolescents. Ryan (1981) indicated that "the developmental trend from early childhood through the late teens appears to form an inverted-U. Beliefs, attitudes and behavior toward the disabled become increasingly favourable until the late teens, whereupon attitudes and beliefs (and perhaps behavior) again become quite unfavourable, although apparently not as unfavourable as in early childhood" (p. 249). In contrast Rosenbaum et al. (1988) reported that they did not find significant age effects nor any consistent trends in studies with children aged 8 to 14 years.

The developmental trend in attitudes can also be assessed by examining attitude differences on a grade criterion. Voeltz (1980) found that grade had a significant effect. Post hoc analyses revealed that on two attitudinal factors (reflecting (a) willingness to interact socially with handicapped children, and (b) disagreement with stereotyping statements and exclusion of handicapped children from schools) attitudes tended to become more positive from lower to higher elementary grades. Perrin (1954) found that grade one subjects were significantly more rejecting of speech defective peers, but found no grade difference among the 2nd to 6th grade subjects. Woods and Carrow (1959) found no grade differences.

Conversely, Horne (1985) reported that attitudes toward disability groups tend to become increasingly negative from lower to higher elementary grades. In support, Horne (1985) cited studies by Billings (1963) and Richardson (1970) which used projective and picture ranking techniques respectively. Woods (1974) finding that third grade subjects gave significantly better ratings to stuttering boys than 6th grade subjects fits with this trend.

It is possible that these divergent findings are attributable to differing methods of measurement. Voeltz (1980) used a 3 point Likert scale, whereas studies cited by Horne (1985) used subjectively interpreted projective techniques (Billings, 1963) and picture ranking procedures (Richardson, 1970) and Perrin (1954), Woods and Carrow (1959) and Woods (1974) used peer nomination and roster-rating methods of measurement. Although no one technique is best for all attitude-measurement situations, Mueller (1986) suggested that:

> If reliability is of paramount importance and the attitudinal issue or object is clearly defined, a highly structured multi-item scale, such as the Likert or Thurstone scales, will be the most efficient

measurement technique. (p. 95)

Since the proposed attitude scale was administered to children grouped by grade, grade rather than age was a criterion in assessing validity. Predictions about performance of the proposed attitude scale on the grade criterion were made on the findings of Voeltz (1980) because the proposed attitude scale most closely resembled the design of the Acceptance Scale used in that study.

Contact

Studies have indicated that attitudes of children who know or have contact with a handicapped person tend to be more positive than those who do not. Evidence of the positive effects of contact were demonstrated in the studies by Voeltz (1980, 1982) and Rosenbaum et al. (1986).

In summary, sex, age in terms of grade, and contact are factors which contribute to the development of attitudes toward mentally and physically handicapped children. The extent to which the proposed attitude scale measures the known trends and differences in childrens' attitudes based on sex, grade and contact is a reflection of its construct validity.

Summary

Peer focused research in the literature has been limited to peer awareness of and reactions to stuttered speech and studies of the social status of speech defective and stuttering children. The relationship between the reactions of stuttering children and the reactions of their peers was evident in the reactive features of stuttering, communication attitudes of stuttering children, and stuttering childrens' reactions to teasing by peers. This evidence supported the position that peers of stuttering children have great impact on the development of stuttering and that negative peer attitudes exist. However, these suppositions need empirical validation. The paucity of research may be largely due to the lack of a valid and reliable instrument with which to assess peer attitudes. The purpose of this study was to develop a valid and reliable attitude scale to measure peer attitudes toward stuttering children.

The tripartite model of attitude was chosen to guide the generation and selection of items, and the creation of subscales. The Likert (1932) summated rating scale was chosen as the most appropriate scaling method. Sex, grade, and previous contact with people who stutter were selected as criteria by which the construct validity of the proposed scale could be assessed.

Research Questions

To develop a valid and reliable scale which measures peer attitudes toward children who stutter, the following research questions were addressed:

1. Which items from the pilot and revised scales had satisfactory item-total score correlations;
2. What was the reliability of the trial revised and final attitude scales as measured by internal consistency;
3. Was the validity of the proposed final attitude scale demonstrated through measures of:
   (a) internal consistency, and
   (b) the extent to which it measured determinants of childrens' attitudes --specifically, it was predicted that:
      (i) females would have more positive attitudes toward stuttering children than males,
      (ii) an age trend in terms of grade would be revealed with attitudes becoming more positive as grade levels increased,
      (iii) children who had contact with a person who stutters would have more positive attitudes than those who did not; and
4. Did the tripartite model of attitude have

construct validity to the extent that validity is evidenced through:

(a) measures of internal consistency of subscales purporting to measure each component, and

(b) factor analysis of scale scores.

CHAPTER III: ATTITUDE SCALE CONSTRUCTION

Construction of a scale to measure peer attitudes toward stuttering children involved the following: (a) preparatory methods which included generation of items, selection of a response format, and selection of attitude referents; (b) pre-testing; (c) selection of items for a pilot scale; (d) administration of the pilot scale, item analysis and selection of items for a revised scale--Experiment I; and (e) administration of the revised scale, item analysis, examination of the construct validity of the trial revised scale, evaluation of the construct validity of the tripartite model of attitudes, and construction of a final version of the attitude scale--Experiment II. The sequential nature of this study is reflected in the organization of the methodology and results.

Preparatory Methods

Preparatory methods involved generation of an item pool, selection of a response format, and selection of attitude referents. Pre-testing was carried out to probe stigmatizing characteristics of the attitude referents, determine the preferred response format, validate subjects' understanding of the response format, and evaluate administrative procedures.

Item Generation

Item generation was guided by the tripartite model of attitude and a defined content domain. Ideas for attitude items were gained from existing attitude scales and interviews of stuttering and non-stuttering children (Siperstein, 1980; Harter, 1982), and items were written heeding suggestions of Girod (1973), Edwards (1957, cited in Girod, 1973) and Mueller (1986).

Content Domain

Content validity, has been a major consideration in the construction of achievement and proficiency tests, however it has often been ignored in construction of attitude scales (Borhnstedt, 1970). The attitudinal domain must be clearly defined and items constructed which explore various aspects of the domain (Ajzen, 1988). In this study the attitudinal domain included the areas of study or work, play and friendships. As implied in the studies on the social position of stuttering and other speech defective children, these aspects of peer interactions were considered important (Marge, 1966; Perrin, 1954; Woods, 1974; Woods & Carrow, 1959). Places in which interactions occur were also considered. These included the home, school and public places.

Existing Scales

Ideas for items were drawn from existing scales measuring peer attitudes toward physically and mentally handicapped children. These scales included the Activity Preference Scale and the Adjective Checklist (Siperstein, 1980), the Friendship Activity Scale (Selman, 1980), the Acceptance Scale (Voeltz, 1980), the Personal Attribute Inventory for Children (Parish & Taylor, 1978), the Chedoke-McMaster Attitudes Towards Children with Handicaps (CATCH) (Rosenbaum et al., 1986), and the Attitude Toward Disabled Persons Scale (Yuker, Block & Younng, 1970).

Interviews of Stuttering Children

Interviews of stuttering children were carried out to gain insight into their perception of peer attitudes, to identify usual activities in which the children engaged, and to discover terminology typically used by children.

One female and three male children who stutter ranging in ages from 9 to 12 years were individually interviewed at ISTAR. Parental consents were obtained (Appendix A). The female and two of the three males were receiving maintenance therapy after having completed an intensive therapy program. The third male had not received any stuttering therapy. The interviews were overtly audio-recorded by way of sound field recording equipment. After a brief discussion of the purpose of the interview, questions intended to elicit statements reflecting the affective, cognitive and behavioral intent components were asked. The interview protocol is set out in Appendix B. No child was asked all of the questions. A verbatim transcript of the childrens' comments was made.

Interviews of Non-Stuttering Children

Fourteen non-stuttering children were interviewed to obtain insight into their attitudes toward stuttering peers and to identify adjectives used to describe stuttering children.

The non-stuttering children, randomly selected from neighbourhood children known and unknown to the investigator, were interviewed either individually or in groups. Parental consents were obtained (Appendix C). Interviews were overtly audio-recorded by way of sound field recording equipment. Five grade four, 2 grade five, and 7 grade six children, of which 6 were male and 8 were female, participated. Ages ranged from 8 to 12 years. Five children knew a person who stuttered.

After a brief discussion of the purpose of the interview, questions intended to elicit affective, cognitive and behavioral intent statements regarding stuttering peers were asked (Appendix D) and a slightly modified version of Siperstein's (1980) Adjective Checklist (Appendix E) was administered to gather more specific information on the adjectives used to describe a child who stutters. No child was asked all of the questions. A verbatim transcript of the children's responses was made.

Writing Items

An initial pool of 116 items was constructed following suggestions of Girod (1973) and Edwards (1957, cited in Girod, 1973) and Mueller (1986). Age appropriate vocabulary and simple, clear, direct language were used. Complex or compound sentences were avoided. Items were short, contained only one complete thought and avoided universals such as all, always, none and never. Positively and negatively worded items were included to disrupt acquiescent responding--a response style in which respondents tend to endorse the same response category for all items. In addition, items were written at the third grade reading level to control for differing reading abilities across grade levels. The Fry Readability Scale (Fry, 1968, cited in Grudner, 1978), used to determine grade-level readability of consent forms, indicated that items were readable at the third grade level. From the initial pool of items, a preliminary behavioral intent subscale, comprised of 31 items, was devised for use in pre-testing administrative procedures.

Response Format

Two sets of response descriptors were devised for a 5 point Likert (1932) type response scale. Following traditional Likert scales, one set of descriptors had endpoints of "strongly disagree" and "strongly agree" with "not sure" replacing the usual "undecided" mid-scale choice. The second set adapted from Harter's (1982) Perceived Competence Scale for Children had the following descriptors: really disagree, sort of agree, not sure, sort of agree and really agree. The two sets of response descriptors were pre-tested using the preliminary behavioral intent subscale. Each half of the subscale had one set of response descriptors.

Attitude Referents

Since the "stimulus used to evoke attitudinal reactions is of crucial importance...[and the] vagueness of labels may evoke S's [subjects] conceptions that are not even similar to those of the investigator" (Jaffe, 1966), it was important to ensure that all subjects in the study had a standard visual and verbal representation of stuttering children. It was also important to provide a male and female referent because gender is a factor in the formation of friendships and children tend not to be as accepting of opposite sex peers (Siperstein, Bak, & O'Keefe, 1988). A pool of stuttering children who had been videotaped prior to treatment at ISTAR was screened. Screening criteria included the following: sex; age; severity of stuttering considering core and associated behaviors; non-verbal behaviors in terms of facial expression, posture, gestures and personal appearance; vocal characteristics in terms of pitch, loudness, intonation; articulatory rate; content of conversation; absence of language and articulation deficits; and absence of stigmatizing characteristics other than stuttering. These criteria mitigated against matching referents on severity of stuttering and absence of apparent articulation deficits.

A male and female were selected. The male, aged 9 years-7 months, was judged to have moderate stuttering at the time of assessment, and the female, aged 8 years-5 months, was judged to have severe stuttering at the time of assessment. Judgements of severity were made by a highly trained speech-language pathologist. Thus, two degrees of severity were represented--moderate and severe. The male also had slight distortions of /tʃ/ as in chum, /dz/ as in juice, and an inconsistent lateralized /s/ production. It was believed that these mild articulatory distortions would not be stigmatizing factors. Parental consents were obtained (Appendix F).

A two minute video-tape was prepared featuring one minute samples of each referent conversing with an interviewer. Segments were taken from video-taped pre-treatment conversations with a stranger at ISTAR. To the extent that frequency counts of syllables stuttered expressed as a percentage (%SS) and the presence of associated verbal, speech related or body movement features are indicative of severity, the pre-treatment severity of the attitude referents was well represented in the one minute samples. The male stuttered on 16.5% of syllables spoken. Stuttering consisted primarily of part word repetitions associated with head movements and broken eye contact. The percentage of syllables stuttered for the female was 43%. Stuttering consisted of audible prolongations and part word repetitions associated with rapid jaw jerking, inversion and compression of lips on bilabial phonemes (eg. b, p, and m), pronounced breathing disruptions, and an almost constant downward head position and gaze.

Counts of syllables stuttered were made independently by this investigator and a student rater. The student rater had received extensive training in the identification and measurement of stuttered and fluent syllables at ISTAR. Before being permitted to analyze speech samples, the student was required to establish 90% reliability in counts of stuttered speech and fluent speech with senior raters at ISTAR. Inter-rater reliability was assessed by comparing this investigator's and the student's independent counts of stuttered and fluent syllables for the male and female. Reliability in percent agreement was 100% for the male and 98.17% for the female.

Stigmatizing characteristics of the attitude referents were probed in the pre-testing procedures.

Pre-testing

Method

Subjects

The 14 non-stuttering children who had been interviewed participated in the pre-testing process.

Materials

A booklet was prepared which contained the following: (a) a section for collection of demographic data and information regarding previous contact with a person who stutters, (b) a training section, and (c) the preliminary behavioral intent subscale. Other materials included the video-tape of the attitude referents and various VHS tape players and TV monitors available at each location in which pre-testing was conducted.

Procedure

Following a brief introduction, the video-tape of the attitude referents was shown, then subjects were asked questions to elicit comments about the attitude referents. Comments were overtly audio-recorded by way of sound field recording equipment and transcribed verbatim. In completing the preliminary behavioral intent subscale, demographic data were obtained, information regarding previous contact with a person who stutters were obtained, the training section was completed, instructions for completion of the preliminary scale were given and the preliminary behavioral intent subscale was completed. Each item was read aloud by the investigator to control for individual differences in reading abilities of the subjects. Subjects were then asked to choose the set of response descriptors they preferred. The order of presentation of each half of the preliminary behavioral intent subscale was counterbalanced across groups and individuals to prevent order effects in relation to response descriptor preference. The entire pre-test protocol can be found in Appendix G.

Immediately following completion of the preliminary behavioral intent subscale and selection of preferred response descriptors, subjects' understanding of the response format was validated by determining the consistency between the response option chosen and a verbal explanation of the choice that was made. Each subject was individually asked to provide a verbal elaboration of between 4 and 7 randomly selected positive and negatively worded items. Comments were overtly audio-taped by way of sound field recording equipment and verbatim transcripts were made. The investigator rated each explanation for consistency with the response option chosen.

Results

Pretesting revealed that no stigmatizing characteristics of the attitude referents, other than stuttering, were identified. The consensus was that, other than stuttering, the attitude referents looked like "normal kids". Not one comment was made about the mild articulatory distortions of the male's speech. Ten of the fourteen subjects preferred the response descriptors with endpoints of "strongly disagree" and "strongly agree". Three subjects preferred the descriptors adapted from Harter (1982) and one subject liked both sets equally. Subject's verbal explanations of responses were judged to be consistent with their circled responses 93 percent of the time and no major problems were encountered in the administrative procedures.

Discussion

Pre-testing was carried out to probe stigmatizing characteristics of the attitude referents other than stuttering, determine the preferred response descriptors, validate subjects' understanding of the response format, and evaluate administrative procedures. Results confirmed that the attitude referents were suitable for assessing peer attitudes toward stuttering children, and were deemed appropriate for use in the remainder of this study.

The 5 point scale with endpoints of "strongly disagree" and "strongly agree" was the most preferred response scale and very good agreement between the response circled and a verbal explanation was demonstrated. Thus, this 5 point scale was selected for use in the pilot and revised attitude scales. Finally, only minor refinements to the administrative procedures were needed.

Selection of Items for Pilot Scale

To reduce the initial pool of 116 items to that which would adequately represent the content domain and the tripartite model of attitude, yet be appropriate in length, a two step procedure was followed which involved screening and classification of items. Final selection and assignment of items to subscales was based on results of the classification procedure.

Screening

Initial screening, conducted by the investigator, involved deleting items that were ambiguous or redundant, selecting approximately equal numbers of items that represented affective, cognitive and behavioral intent components, selecting approximately equal numbers of positive and negative items, and ensuring that the content domain (items which explored study or work, play and friendship aspects of interactions) was adequately represented. As a result, 44 items were discarded and 72 were retained.

The 72 items were then reviewed by persons involved in the fields of stuttering research, attitude scale construction, and elementary education to determine each item's face validity, clarity in terms of negativity or positivity, and appropriateness of grammatical structure, complexity, language and reading level. Deletions and revisions made on the basis of reviewer comments reduced the pool to 61 items.

Classification of Items

Method

Judges. Four experienced and 4 novice judges classified the 61 items. Experienced judges were two graduate students in the Department of Psychology, a professor in the Department of Speech Language Pathology and a professor in the Department of Education at the University of Alberta. Four undergraduate students enroled in various disciplines at Red Deer College were the novice judges.

Materials. A booklet containing the items and instructions for classification was prepared. Instructions included component definitions adapted from those devised by Ostrom (1969) with examples. In an attempt to enhance meaningfulness of the components, affective, cognitive and behavioral intent labels were replaced with feelings, beliefs and intention to act respectively. The instructions and items are set out in Appendix H.

Procedure. Judges were asked to complete the classification of items at their own convenience. A minimal stipend was paid to novice judges.

Results

Table 1 shows the frequency with which items were assigned to an attitudinal component by judges. Forty three items were assigned to one component by all judges (an 8:0:0 proportion among components). One item had a bi-modal (4:0:4) assignment among components. Seventeen items had been assigned to two or three components but a modal component was obviously identifiable. To determine if the modal component was reliable, chi square tests (Welkowitz, Ewen, & Cohen, 1982) of significance were used to determine if the modal component was significantly different from that which would have occurred by chance alone. Since it could be expected that, by chance alone, an item could be assigned to one component one third of the time, the proportion of assignments to the attitudinal components for the 17 items was tested against the null hypothesis of .33.

Table 2 shows that chi-square values for items assigned to components with proportions of 7:1:0 (8 items) and 6:1:1 (2 items) exceeded the critical values. Thus the modal components were significantly different from that which could have occurred by chance alone.

Chi-square values for the items having proportions of 6:2:0 (5 items) and 5:3:0 (2 items) did not exceed the critical value at p=.05. These items were deemed to represent more than one component.

Discussion

The purpose of the classification of items was to determine which items were most appropriate for a pilot attitude scale and to assign items to subscales. Final item selection and subscale assignment were made on the basis of judges' responses and procedures used by Ostrom (1969). Items selected for the pilot scale included the 43 items which had been assigned to one component and 9 of the 10 items for which the modal component was significantly different than that which would have occurred by chance alone (those with 6:1:1 and 7:1:0 assignments). Item 38 was discarded on the basis of reviewer comments. The modal component was deemed to best represent an item (Ostrom, 1969) and items were assigned to the corresponding subscales. Seven items with 6:2:0 and 5:3:0 assignments were subject to rejection, however, three items were retained because the affective subscale was under-represented at this stage of development. Items 16 and 28 were revised to make them more clearly reflect the affective component and item 35 was retained without revision. As indicated in Table 1 some retained items were further revised either to balance the number of positive and negative items within each subscale or to make other necessary revisions which did not affect membership to the assigned attitudinal component. Finally all negative contractions were replaced by full negative forms.

Fifty five items had been retained for the pilot scale which, in accordance with Golden, Sawicki and Franzen (1984) and Mueller (1986), was approximately two to three times greater than the 20 to 30 items desired in a final scale.

CHAPTER IV: EXPERIMENT I - PILOT SCALE

The objective of this experiment was to select items for a revised version of the proposed attitude scale from the pool of 55 items remaining after item selection had been completed. In this stage of scale development, the pilot attitude scale was administered to a restricted sample of the subject population, items were analyzed to determine which had satisfactory item-total score correlations, items were then selected for a trial revised scale and the reliability and validity of the trial revised scale were determined.

Method

Subjects

The pilot scale was administered to 28 fifth grade students in an urban school in the public school system. Ages ranged from 10 to 12 years. Fifteen subjects were male and 13 were female. Eight subjects had contact with a person who stutters. Since this study did not incorporate an educational component, a classroom in which there were no children who stutter was selected to prevent possible embarrassment of and/or deleterious heightened sensitivity toward a stuttering child. Grade 5 was selected because it represented the median grade to which the revised scale was to be administered. Once the classroom had been selected, no selectional criteria within the class were imposed.

Subjects represented all students present in class on the day the scale was administered. Full cooperation of the school board and school personnel was obtained. No parental consents were required.

Materials

A booklet was prepared which contained a section for collection of demographic data and information regarding prior contact with someone who stutters, a training section, and the 55 item pilot scale.

The training section differed from that used in the pre-testing in that it consisted of 2 behavioral intent items, one cognitive item and one affective item rather than 4 behavioral intent items. An item in which negativity was achieved by using "not" was included to give subjects experience with this type of negative item.

The 55 items were initially arranged in random order. Then, to disrupt response bias and minimize methodological artifacts, adjustments were made to ensure that (a) not more than 2 positive or negative items and not more than 2 items from one subscale followed in succession, and (b) approximately equal numbers of positive and negative items and items belonging to each subscale were in each half of the pilot scale.

The pre-tested 5 point Likert (1932) response scale with endpoints of "strongly disagree" and "strongly agree" was used. The training section and pilot scale are shown in Appendix I.

Other materials included the video-tape of the pretested attitude referents and the school's VHS tape player and TV monitor.

Procedure

Administration

Administration of the pilot scale involved the following:

1. Demographic data were obtained.
2. The training section was completed. Following completion of each training item, randomly chosen subjects, were asked to give their response and elaborate on why the choice was made. The consistency between the verbal elaboration and chosen response allowed the investigator to ensure that subjects understood the instructions and the response format. The discussion provided opportunity for exploration and clarification of possible discrepancies.
3. The video-tape of the attitude referents was shown.
4. Information regarding previous contact with a person who stutters was obtained. Subjects were required to provide that person's first name as a way of validating their response.
5. Instructions for completion of the revised scale were given.

6. The pilot scale was completed. Each item was read aloud by the investigator to control for individual differences in reading abilities. After administration of the scale began, questions regarding the interpretation of items were evaded by a planned response which encouraged the subjects to make their choice according to how they understood the statement. At the half-way point in the scale, subjects were told that they were half-way through and were reminded to make the choice that was best for them.

7. Subjects were debriefed. Debriefing was intended to discourage formation of a negative bias toward or stereotype of children who stutter, which may have been inadvertently fostered by the inclusion of negative items in the scale. Following Yuker's (1988) suggestions, subjects were cautioned against adopting negative items as statements of truth and fact, and the heterogeneity of stuttering children was stressed.

The entire procedure took an average of 26 minutes to complete with 9 being devoted to completion of the 55 items pilot scale. The protocol for administration of the pilot scale, including the training section, is shown in Appendix J.

Scoring

Attitude items were scored using values ranging from 0 (strongly disagree) to 4 (strongly agree). Negative items were inversely coded. Response omissions were dealt with by computing the mean score on completed items and selecting the response choice that was closest to the mean. Only one subject omitted one response.

Results

Item Analysis

Pearson Product Moment correlations of item scores with total scores were computed. Item-total score correlations indicate the extent to which items discriminate among respondents in the same manner as the total score (Mueller, 1986). Correlation coefficients, ranked irrespective of directionality (positive or negative), are shown in Table 3. Correlations ranged from a low of -.0497 to a high of .8682. Mueller, (1986) suggested that items having low or near zero correlations should be eliminated because they are not measuring the same construct as other items and do not contribute to the scale. Nunnally, (1970) indicated that items having the highest item-total score correlations are the best items since they have more variance relating to a common factor and will thus enhance scale reliability. According to Jackson (1988) items with item-total score correlations of above .25 are potentially good items. As shown in Table 3, 53 of the 55 items had correlations above .25.

Item Selection

To maximize respondent cooperation, it was prudent to reduce the number of items for the revised scale to approximately 2 times the minimum number of items desired in a final scale. Working from the top of the rank ordered correlations downward, 40 items having the highest item-total score correlations were selected for a trial scale. As a result, items having negative item-total score correlations or positive correlations of less than .5000 were rejected. Although directionality of items and subscale membership were not used as criteria in selecting items for the trial scale, satisfactory representation of positive and negative items and each attitudinal component was obtained. Twenty one items were positive and 19 were negative. The affective subscale was comprised of 14 items, of which 7 were positive and 7 were negative. The cognitive subscale had 10 items, of which 5 were positive and 5 were negative and the behavioral intent subscale had 16 items, of which 7 were negative and 9 were positive.

Reliability and Validity

Internal consistency, or the correlation between items, is an estimation of reliability in terms of inter-item consistency or similarity in measurement across items rather than stability over time or across forms (Mueller, 1986). It also provides evidence of construct validity to the extent that items with high intercorrelations are "working together to measure the same underlying variable" (Mueller, 1986, p. 71). Coefficient alpha (Cronbach, 1951), used to compute internal consistency among multipoint scored items as in Likert-type scales (Anastasi, 1988; Nunnally, 1970), for the 40 items comprising the trial scale was .9690.

Internal consistency of each subscale was also determined. Alpha coefficients for the affective, cognitive and behavioral intent subscales were .9133, .8681 and .9503 respectively.

Discussion

Experiment I was carried out to select items for a revised version of the proposed attitude scale. Fifty five items were tested. Forty items having the highest item-total score correlations were selected for a trial revised scale. Reliability and validity of the total trial scale and each subscale, as estimated by internal consistency, were determined.

Considering that, an alpha above .70 is good (Jackson, 1988) and "a well constructed attitude scale...will have a reliability coefficient of .80 or even .90" (Mueller, 1986, p. 58), sufficient evidence of reliability and validity were demonstrated by the high measures of internal consistency obtained for the total scale and each subscale. The 40 item trial scale formed a suitable attitude scale and was used as the revised scale in subsequent testing. Minor grammatical revisions were made to items 31 and 48 which did not affect their content or subscale membership.

SPSS-X (SPSS Inc., 1988), the updated and revised Statistical Package for the Social Sciences, was utilized for all statistical calculations.

CHAPTER V: EXPERIMENT II - REVISED SCALE

The goal of this experiment was to select items for a final version of the proposed attitude scale from the pool of 40 items retained in experiment I. In this phase of scale development the revised attitude scale was administered to a larger sample of the subject population, item responses were analyzed to determine which had satisfactory item-total score correlations, potential items for a final version of the proposed scale were identified, reliability and validity of the proposed scale were examined, validity of the tripartite model of attitude was evaluated, and finally options were explored for constructing a final version of the proposed attitude scale.

Method

Subjects

The revised scale was administered to 267 subjects enroled in grades 4, 5 and 6 in public and catholic schools located in urban areas. Ages ranged from 8 to 13 years. Each gender and grade was almost equally represented. Slightly less than one third of the sample had contact with a person who stutters. The distribution of subjects across grade, gender and contact with a person who stutters is shown in Table 4. The size of the subject pool surpassed the suggested minimum of five times the number of items

(Nunnally, 1970), or 200 subjects.

Full cooperation of all school boards and school personnel was obtained. No parental consents were required, however, in one instance a notice to parents was required (Appendix K). Since this study did not incorporate an educational component, classrooms in which there were no children who stuttered were selected to prevent possible embarrassment of and/or deleterious heightened sensitivity toward a stuttering child. No selectional criteria within the chosen classes were imposed. Subjects represented all those present in each class on the day the scale was administered. Thus, subjects represented a wide range of individual abilities typically found in regular classrooms in which children with normal and exceptional learning abilities are integrated. Although information regarding cognitive abilities or scholastic performance of subjects was not solicited, it was learned from teachers immediately prior to or after testing that 11 subjects had learning difficulties. Since these subjects' responses did not appear distinct from their classmates on visual examination, their completed attitude scales scores were included in all statistical computations.

Materials

A booklet was prepared which contained the following: (a) a section for collection of demographic data and information regarding prior contact with a person who stutters, (b) a training section, and (c) the revised scale consisting of the 40 selected items. The training section was the same as that used in the pilot scale which is shown in Appendix I.

The 40 selected items were re-arranged in random order. To prevent formation of a negative bias at the outset, a positive item was randomly selected for the first item. Then, to disrupt response bias and minimize methodological artifacts, items were re-ordered ensuring that (a) approximately equal numbers of positive and negative items belonging to each subscale were placed in each half of the scale, and (b) not more than 2 positive or negative items and not more than 2 items belonging to the same subscale were in succession. Finally, items were re-numbered. The revised scale items, in the re-numbered format, are presented in Appendix L.

The pre-tested 5 point Likert (1932) response scale with endpoints of "strongly disagree" and "strongly agree" was used.

Other materials included the video-tape of the pre-tested attitude referents and VHS tape players and TV monitors belonging to the 4 participating schools.

Procedure

Administration

Administration of the revised scale involved the following:

1. Demographic data were obtained.

2. The training section was completed. Following completion of each training item, randomly chosen subjects were asked to give their response and elaborate on why the choice was made. The consistency between the verbal elaboration and chosen response allowed the investigator to ensure that subjects understood the instructions and the response format. The discussion provided an opportunity for exploration and clarification of possible discrepancies.

3. The video-tape of the attitude referents was shown with the order of presentation being counterbalanced across classes.

4. Information regarding previous contact with a person who stutters was obtained. Subjects were required to provide that person's first name as a way of validating their response.

5. Instructions for completion of the revised scale were given.

6. The revised scale was completed. Each item was read aloud by the investigator to control for individual differences in reading abilities. After administration of the scale began, questions regarding the interpretation of items were evaded by a planned response which encouraged subjects to make their choice according to how they

understood the statement. At the half-way point in the scale, subjects were told that they were half-way through and were reminded to make the choice that was best for them.

7. Subjects were debriefed. Debriefing was intended to discourage formation of a negative bias toward or stereotype of children who stutter which may have been inadvertently fostered by the inclusion of negative items in the scale. Following Yuker's (1988) suggestions, subjects were cautioned against adopting negative items as statements of truth and fact, and the heterogeneity of stuttering children was stressed.

The entire procedure took an average of 25 minutes to complete with an average of 7 minutes having been devoted to completion of the revised scale.

Scoring

Attitude items were scored using values ranging from 1 (strongly disagree) to 5 (strongly agree). Negative items were inversely coded. Response omissions were dealt with by computing the mean score on all completed items and selecting the response choice that was closest to the mean. Three subjects omitted 1 response and 1 subject omitted 2 responses.

Results

Item Analysis

Pearson Product Moment correlations of item scores with total scores were computed. Table 5 shows ranked correlation coefficients for revised scale items grouped according to directionality. Correlations ranged from a low of .2596 to a high of .7919 with all correlations being positive.

Item Selection

According to Jackson (1988), items with positive item-total score correlations of above .25 are good items for an index. Thus, all items in the revised scale are potential items for a final scale.

Reliability and Validity of the Revised Scale

Internal Consistency

Reliability was estimated and evidence of construct validity was provided by measures of internal consistency. Coefficient alphas were .9631. for the total scale and .9216, .8472 and .9482 for the affective, cognitive and behavioral intent subscales respectively.

Analyses of Variance

Since internal consistency is not a complete or sufficient technique for demonstrating construct validity (Mueller, 1986) further analyses were required to demonstrate validity of the revised scale. Three way analyses of variance using SPSS-X Release (SPSS-X, 1988) were carried out to determine the extent to which the total scale and subscales revealed known trends and differences in childrens' attitudes based on sex, grade and contact. Research on peer attitudes toward mentally and physically handicapped children revealed that (a) females tended to have more positive attitudes than males (Rosenbaum et al., 1986; Siperstein et al., 1977; Voeltz, 1980, 1882), (b) early childhood attitudes tended to follow a developmental trend with early childhood attitudes being less favourable than attitudes of adolescents (Ryan, 1981); and (c) attitudes of children who know a handicapped person tended to be more positive than those who do not (Rosenbaum et al., 1986; Voeltz, 1980, 1982). Independent variables were sex (2 levels), contact (2 levels) and grade (3 levels). Descriptive statistics are shown in Tables 6 through 9 and ANOVA results are presented in Tables 10 through 13.

Sex. Although group means were consistently higher for females than males on all subscales and the total scale, significant main effects for sex were not found. Respective mean scores for females versus males were 3.666 and 3.474 on affective subscale, 3.826 and 3.737 on the cognitive subscale, 3.899 and 3.686 on the behavioral intent subscale, and 3.799 and 3.624 on the total scale.

Contact. Significant differences in mean scores were found on all subscales and the total scale between subjects who had contact with a person who stutters and those who did not. Subjects who had contact had consistently higher means. Respective mean scores for subjects who had contact with someone who stutters versus those who did not were as follows: (a) 3.803 and 3.481, F (1, 255)=9.32, p=.00251, on the affective subscale; (b) 3.915 and 3.730, F (1,255)=5.50, p=.01975, on the cognitive subscale; (c) 4.059 and 3.690, F (1,255)= 11.80, p=.00069 on the behavioral intent subscale; and (d) 3.933 and 3.627, F (1,255)=10.94, p=.00108 on the total scale.

Grade. Significant main effects for grade were found on all subscales and the total scale. Respective means for grades 4, 5 and 6 were as follows: (a) 3.357, 3.744 and 3.609, F (2,255)=3.96, p=.02021, on the affective subscale; (b) 3.568, 3.922 and 3.851, F (2,255)=9.26, p=.00013, on the cognitive subscale; (c) 3.525, 3.958 and 3.891, F (2,255)=6.92, p=.00119, on the behavioral intent subscale; and (d) 3.477, 3.874 and 3.783, F (2,255)=6.97, p = .00113, on the total scale. Post-hoc analyses using Newman-Keuls' Multiple range test were carried out to determine which grade means differed significantly. Significant differences are reported in Table 14. In summary, mean scores for grades 5 and 6 were significantly higher than grade 4 on all subscales and the total scale. Differences between grade 5 and 6 means (as set out above) were not significant.

First and Second Order Interactions. A significant first order interaction among sex and grade and a significant second order interaction among sex, contact and grade were found on the cognitive subscale only.

1. Group cell means for the first order interaction among sex and grade are graphed in Figure 2 and cell and least square means are reported in Table 15. As anticipated, 5th and 6th grade females had higher mean scores than their male counterparts, but unexpectedly, 4th grade females had a lower mean score than their male counterparts. Significant Newman-Keuls'post-hoc multiple comparisons of least square means are reported in Table 16. In summary, the group mean for 4th grade females was significantly lower than group means for 4th grade males and 5th and 6th grade males and females. Differences between 5th and 6th grade males and females were not significant. As well, the mean for grade 4 males was not significantly lower than 5th and 6th grade males and females.

2. The cell means for the second order interaction among sex, grade, and contact are graphed in Figure 3 and reported in ranked order in Table 17. Interestingly, 4th grade females who had contact with someone who stutters (F4C-Y) had a lower mean score than 4th grade males who had no contact with someone who stutters (M4C-0), but the difference between the means was not significant when subjected to post-hoc analyses. This finding may be sample

specific. Significant Newman-Keuls'post-hoc comparisons are reported in Table 18. In summary, F4C-Y and M4C-O mean scores were significantly lower than all 5th and 6th grade females, 6th grade males who had contact with a person who stutters, and 5th grade males who had no contact with a person who stutters. Thus, F4C-Y and M4C-O had significantly less positive attitudes overall on the cognitive subscale.

Summary. Attitudes were significantly more positive for subjects who had contact with someone who stutters than those who did not, and there was a developmental trend across grade levels with attitudes being significantly more positive in grades 5 and 6 than in grade 4. Although significant differences by sex were not found, female subjects tended to have higher mean scores than males.

The emergence of significant first and second order interactions on the cognitive subscale only suggests that subjects seemed to respond differently to the cognitive subscale than they did to the affective and behavioral intent subscales. The cognitive subscale items express beliefs about stuttering children. Figure 2 indicates that there may be a gender based difference that develops in beliefs across grades. Fourth grade females had a lower mean, thus more negative beliefs, than males on the cognitive items but had higher means, or more positive beliefs, in grades 5 and 6. However, Figure 3 indicates that contact had an effect on both males and females in grade 4.

Validity of the Tripartite Model of Attitude

Construct validity of the tripartite model of attitude as represented by the subscales was supported to a limited extent by the high measures of internal consistency within each subscale. Coefficient alphas were .9216, .8472 and .9482 for the affective, cognitive and behavioral intent subscales respectively. In addition, the emergence of significant first and second order interactions on the cognitive subscale only suggests that subjects seemed to respond differently to the cognitive subscale than they did to the affective and behavioral intent subscales. However, a more stringent analysis was required to determine the extent to which the tripartite model should guide final item selection and subscale definition. Factor Analysis using SPSSX-Release (SPSSX, 1988) was carried out to determine whether distinct attitudinal components would emerge as underlying dimensions.

Factor Analysis

Factor analysis is based on the assumption that a number of underlying factors, fewer than the total number of variables or items, account for the covariation among variables (Kim & Mueller, 1978a). It is a statistical technique for analyzing the interrelationships in the data (Anastasi, 1988) indicating which, and to what degree, variables or items relate to an underlying factor (Kim & Mueller, 1978a). An initial factor solution is obtained to determine the minimum number of factors that can adequately account for the observed correlations and determine the communality or amount of variance of each item accounted for by the common factors (Kim & Mueller, 1978b). The initial factor solution is then rotated to obtain simpler more easily interpretable results (Kim & Mueller, 1978a).

Principal components analysis. Principal components analysis, which attempts to explain as much variance in the data as possible (Kim & Mueller, 1978b), was used to obtain the initial factor solution. To make the initial factors unique and definable, principal components analysis arbitrarily assumes that the factors are orthogonal, or uncorrelated, and arranges them in descending order of importance with the first factor accounting for as much variance as possible, the second accounting for as much of the remaining variance as possible, and the third and subsequent factors accounting for as much of the variance left unexplained by the prior factors. Three factors were extracted based on the hypothesis that three factors representing the tripartite model of attitude would emerge.[1]

Results of the principal components analysis are shown in Table 19. The relative importance of each factor is reflected in the magnitude of its eigenvalue[2] and the proportion of variance explained by each factor is calculated by dividing the eigenvalue by the number of variables or items (Kim & Mueller, 1978b). As shown in Table 19, Factor 1 accounted for 42.9% of the variance and Factors 2 and 3 accounted for 4.6% and 3.6% of the variance respectively.

Oblimin rotation. The factor solution was then rotated using oblimin rotation. In performing oblimin rotation, a method of oblique rotation which assumes that factors are correlated, the restrictions of factor orthogonality and descending order of importance imposed by principal components analysis (Kim & Mueller, 1978a) were removed. If, after oblique rotation, it is found that factors are uncorrelated, it is more certain that orthogonality of the factors is not an artifact of rotation (Kim & Mueller, 1978b). If factors are uncorrelated, it is assumed that they represent distinctive underlying dimensions which make unique contributions to the attitude scale.

The resulting factor structure matrix after oblimin rotation, with items grouped by subscale, is presented in Table 20. Factor loadings in the structure matrix reflect correlations between the underlying factors and items[3]. Correlations among factors, shown in Table 21 were moderately low.

Underlying dimensions. Items were assigned to factors on which they loaded highest. Items which loaded within .05 on two factors were assigned to both factors (Rosenbaum et al., 1986) but were not considered in determining underlying dimensions since such items did not clearly represent one factor. High loading items were considered to be those with loadings of ≥ .6000. The hypothesis that factors would represent three distinct attitudinal components was tested by examining the items which loaded high on each factor. As shown in Table 22, affective and behavioral intent items loaded high on Factor 1 while affective and cognitive items loaded high on Factors 2 and 3.

Summary. Factors clearly representing each attitudinal component did not emerge. Factor 1 contained a mixture of affective and behavioral intent items and accounted for 42.9% of the variance. Factors 2 and 3 contained a mixture of affective and cognitive items and accounted for 4.6% and 3.6% of the variance respectively. However, there was no overlap of behavioral intent and cognitive items. Correlations among factors shown in Table 18 were moderately low.

Discussion

This experiment was carried out to select items for a final version of the proposed attitude scale from the pool of 40 items retained in Experiment I. Item-total score correlations were calculated to identify potential items for a final version of the proposed scale, reliability and validity of the proposed scale were examined, and validity of the tripartite model of attitude was evaluated.

The obtained item-total score correlations indicated that all 40 items are potential items for a final version of the attitude scale. Excellent measures of internal consistency for the total scale and the subscales provide good evidence of the reliability and validity of the 40 item scale. ANOVA results provide further evidence of construct validity to the extent that predictions about the performance of the revised attitude on the criterion of contact were borne out. Subjects who had contact with a person who stutters had significantly more positive attitudes than those who did not. Predictions about the performance on the grade criterion revealed that attitudes tended to become more positive as grade levels increased. Fourth grade subjects had significantly more negative attitudes than 5th and 6th grade subjects. Although there was no significant difference between grades 5 and 6, 5th grade means were consistently higher than 6th grade means. This finding does not follow a strict developmental trend in which attitudes become increasingly favourable from early childhood until late teens. This finding may be sample specific or it may reflect an unfavourability in the attitudes of some 6th grade subjects who are entering adolescence and are faced with the unsettling changes that accompany pubescence and changing social interactions between males and females. Construct validity of the revised scale with respect to sex differences in attitude was not supported. Although female means were consistently higher than male means across subscales and the total scale, the differences were not significant. Post-hoc analysis of means arising from the first order interaction on the cognitive subscale revealed that 4th grade females had significantly more negative attitudes than their male counterparts (Table 16). Although the difference was not significant in post-hoc analysis of the second order interaction, 4th grade females who had contact with someone who stutters had a lower mean score (Table 17) than all 4th grade males. These findings are likely responsible for the lack of predicted significant differences by sex. It is likely that these findings are also sample specific and would not bear out in further testing.

Experimentwise error rate is increased when there are 4 applications of ANOVA to data from the same subjects. Therefore, probabilities of error exceeding .0125 (.05/4) must be viewed with caution. This applies to the significant findings on Grade on the affective subscale, Contact on the cognitive subscale and the first and second order interactions on the cognitive subscale.

Factor analytic results did not support the construct validity of the three component model of attitude for the purposes of final item selection or subscale definition. The aggregation of affective and behavioral intent items on

Factor 1 and affective and cognitive items on Factors 2 and 3 suggests that a two-component model of attitude--affective-behavioral intent and affective-cognitive--may be more meaningful than the three dimensional model. These findings partially support those of Bagozzi and Burnkrant (1979) and Rosenbaum et al. (1986) to the extent that a two dimensional model may be more meaningful. However, unlike Bagozzi and Brunkrant (1979) and Rosenbaum et al. (1986), a clearly cognitive factor did not emerge in these results. These findings support Mueller's (1986) assertion that "affect for or against is a critical component of the attitude concept" (p. 2). It may be that, for this age group, verbal expressions of feelings about a psychological object are so intimately interwoven with expression of their beliefs or behavioral intentions that affective responses are not distinct from cognitive or behavioral intent responses when measured by verbal response indices. However, the lack of overlap between behavioral intent and cognitive items on the factors which emerged in this study and the emergence of first and second order interactions only on the cognitive subscale in the ANOVA provides minimal support for the distinctiveness of the cognitive component.

The substantive meaning of a factor is determined by examining the items which load most highly on the factor and deciding what such items have in common (Kim & Mueller, 1978a). Instead of representing distinct attitudinal components, factors represented content-defined dimensions. The highest loading items in factor 1 were primarily positive and seemed to constitute a positive social distance construct in which general comfort in being with stuttering children is expressed. Factor 2 items were all negative and appeared to represent a verbal interaction dimension characterized by frustration. Factor 3 items were primarily negative and seemed to represent a social pressure factor relating to concern about what other peers or adults thought about stuttering children. These dimensions may be more meaningful and practically useful in future development of the peer attitude scale and in the development of educational programs. The moderately low correlations among factors suggest that although there is overlap among the factors, they each make some distinct contributions to the revised attitude scale.

Future Research

Definitive research is needed to evaluate the construct validity of the tripartite model of attitude in the measurement of childrens' attitudes. This study was not designed or intended to be a definitive study of the construct validity of the tripartite model, thus conclusions about the model's validity cannot be made. Breckler (1984) suggested that non-verbal measures such as recordings of physiological responses of affect or overt behavior should be used in addition to verbal report measures because "one's cognitive system cannot be assumed to have complete access to emotional and behavioral experience" (P. 1193). Also, confirmatory factor analyses or covariance structure analyses--which tests a models' goodness of fit to the data--should be used to validate the tripartite model of attitude rather than exploratory factor analysis. Factor analysis used in this study was essentially exploratory, being confirmatory only to the extent that the number of underlying common factors was hypothesized.[4]

Further research is also needed to determine if a method/halo factor exists that is specific to negative items. The aggregation of primarily positive items on Factor 1 and negative items on Factors 2 and 3 in this study led to the interpretation that a positive construct--positive social distance--and two negative constructs--frustration associated with verbal interaction and social pressure related to a negative stereotype of stuttering children--constituted common underlying dimensions. It is possible that negative items contribute to a negative item factor which Marsh (1986) called a "method/halo bias..specific to the negative items" (p. 37). Evidence presented by Benson and Hocevar (1984), Marsh (1986), and Rifkin, Wolf, Lewis and Pantell (1988) indicated that the validity of childrens' rating scales may be reduced by including negative item responses in scale scores since children have difficulty responding appropriately to negatively worded items. It seems that the negative item bias gets weaker as age increases, however Marsh (1986) found that it still existed for 5th grade students. Although Rosenbaum et al. (1986) did not address the issue of a negative item method bias, inspection of their Factor 1 items revealed a preponderance of positive items whereas Factor 2 items were primarily negative and factor 3 items were all negative. Further research using confirmatory analysis is needed to determine whether negative items should be excluded from further revisions of the revised attitude scale.

Another issue which deserves attention in further research is the impact on scale scores of socially desirable responding--the tendency for respondents to make socially desirable responses at the expense of their true attitudes to achieve a better image of themselves. Mueller (1986) indicated that socially desirable responding may threaten the validity of a scale. "The measurement problem occurs when this tendency is unequal among respondents. If some test takers gain many points, through socially desirable responding and others gain few or no points, then a large portion of variance (spread) in scale scores will be response-set variance rather than substantive (i.e. attitudinal) variance" (p. 74). The effects of socially desirable responding were demonstrated by Hagler, Vargo and

Semple (1987) who found that university students' "faked scores" (condition in which subjects were asked to respond in a manner that reflected the most positive attitude possible) were significantly higher than "honest" scores on the Attitudes Toward Disabled Persons Scale (Yuker, Block & Younng, 1970). Utilizing a scale such as the Social Desirability Scale for Children (Lunneborg & Lunneborg, 1964) and correlating summated scores with attitude scale scores in future research will reveal information about the extent to which attitude scores are inflated by the subjects' desire to present a better image.

Final Scale Options

Several options exist for construction of final scale. The first, called the Peer Attitudes toward Stuttering Children-40 (PATSC-40), utilizes all 40 items. Use of this scale will allow validation of the content-defined dimensions revealed in this study if, in subsequent administrations, the same three content-defined dimensions emerge. All items were previously shown to be potentially good items for a final scale. Internal consistency of PATSC-40 using coefficient alpha was .9631. However, prior to recommending use of the PATSC-40 in peer attitude measurement, cross validation with a new sample of subjects and test re-test must be carried out. Further, additional research in which concurrent and predictive validation is demonstrated would further enhance the validity of the PATSC-40.

A second option involves creation of two 20 item alternate forms. Shorter scales are desirable because they are likely to enhance respondent cooperation and alternate forms could be used in pre and post intervention measurement. Mueller (1986) suggested using an odd-even split procedure to create alternate forms wherein odd-numbered items are selected for one form and even-numbered items are selected for the other form. Working from the top downward of each group of positive and negative items shown in Table 5, PATSC-20 Form A (shown in Appendix M) and PATSC-20 Form B (Appendix N) were created. The procedure began with first items in each group being assigned to Form A and the second items being assigned to Form B. It ended with the last two items in the positive group being assigned to Form B to achieve a 20 item scale. Alpha coefficients for PATSC-20 Form A and PATSC-20 Form B were .9330 and .9235 respectively. Split half reliability for the alternate forms was .9344. Thus, measures of internal consistency provide evidence of reliability and validity of Forms A and B and split half reliability provides further evidence of reliability.

Other options involve creation of factor subscales and further development of items to more comprehensively assess each dimension. Of particular interest is the social pressure factor associated with concern about what others think of stuttering children. The powerful impact of peer influence was revealed in the interviews of non-stuttering subjects in pre-testing procedures. The majority of subjects were deeply and genuinely concerned with what their friends might think about stuttering children. Subjects frequently indicated that their feelings and behaviors would be strongly influenced by their non-stuttering peers. Further research might indicate that this is the most appropriate dimension to target and use as an outcome variable in intervention programs designed to improve peer attitudes.

CHAPTER VI: SUMMARY AND CONCLUSIONS

There is consensus that genetic and neurophysiological factors interact with environmental factors to produce stuttering (Gregory, 1986; Riley & Riley, 1988). Stresses put on a child's vulnerable physiological system by parents, siblings and peers may stress the system beyond its threshold of fluency (Riley & Riley, 1988). The impact of peers on the development of stuttering is of concern. Anecdotal, clinical and empirical evidence was presented in support of the assertion that the academic achievement, socialization and healthy development of stuttering children are often compromised as a result of the consequences of stuttering in the school setting.

The importance of examining the effects of stuttering on peer interactions had been recognized in 1971 by Bloch and Goodstein, however, this area of research received little attention. The need for educational programs had also been recognized in the stuttering literature, however, there appeared to be a virtual absence of research dedicated to the development and evaluation of peer education programs. It was hypothesized that the paucity of research was largely due to the lack of valid and reliable instruments with which to assess peer attitudes. The purpose of this investigation was to construct empirically a scale to measure peer attitudes toward stuttering children.

Development of the attitude scale involved three distinct stages. Preparatory methods involved generation of an item pool, selection of a response format, and selection of attitude referents. Pre-testing was carried out to probe stigmatizing characteristics of the attitude referents, determine preferred response format, validate subjects' understanding of the response format, and evaluate administrative procedures. Selection of items for the pilot scale involved screening and classification of items into attitudinal components. Results of the classification procedure guided final selection of items for the pilot scale.

The objective of Experiment I was to select items for a revised version of the attitude scale from the pool of 55 items retained after selection processes had been completed. Forty items demonstrating satisfactory item-total score correlations were selected for the revised attitude scale. Evidence of reliability and validity were provided by high measures of internal consistency for the total scale and each subscale.

The goal of Experiment II was to select items for a final version of the proposed attitude scale. Satisfactory item-total score correlations had been obtained for all 40 items, thus they were all potential items for a final scale. Reliability and validity of the 40 item scale was demonstrated through satisfactory measures of internal consistency. More stringent evidence of construct validity was demonstrated for the proposed 40 item scale by the extent to which scores agreed with known trends and differences in childrens' attitudes. Construct validity was supported on the grade and contact criteria, but not on sex. The validity of the tripartite model of attitude was evaluated to determine the extent to which it should guide final selection of items. Factor analytic results provided minimal support for a two-component model comprised of affective-cognitive and affective-behavioral intent dimensions. Instead of clearly representing attitudinal components, factors more appropriately represented dimensions reflecting social distance (Factor 1), verbal interactions characterized by frustration (Factor 2) and a social pressure factor associated with concern about what others think about stuttering children (Factor 3).

Directions for future research include the need to evaluate the discriminant validity of the tripartite model in the measurement of childrens' attitudes, determine the existence of a method/halo bias specific to negative items, and evaluate the impact on scale scores of socially desirable responding.

Options were presented for final scale construction. Except for cross validation and test-re-test reliability which must be assessed, results revealed that the 40 item revised scale in its current form, PATSC-40, appears to be a valid and reliable scale capable of measuring peer attitudes toward stuttering children. Further research demonstrating concurrent and predictive validity of the PATSC-40 would enhance construct validity of the scale.

Reliability and validity of the alternate forms PATSC-20 Form A and PATSC-20 Form B, as measured by internal consistency and split half reliability, were demonstrated. Further research is needed to cross validate and determine test re-test and parallel form reliability of the alternate forms.

Further research to develop factor subscales or items to more comprehensively assess each underlying dimension is also a possibility.

The greatest potential of a peer attitude scale will be its ability to detect positive shifts in attitude brought about by intervention programs designed to improve peer attitudes. The PATSC-40 appears to be a viable scale for measuring peer attitudes toward stuttering children. It is expected that cross validation and test re-test reliability will confirm this. The development of this scale represents the first step in the process of developing valid and reliable instruments to measure peer attitudes toward stuttering children. This investigator is optimistic that development of the PATSC-40 will encourage researchers and clinicians to begin the process of improving the school environment of stuttering children through the development of attitude modification programs.

FOOTNOTES

1. Seven factors with eigenvalues of greater than 1 emerged in the initial statistics of the principal components analysis. A criterion frequently used to determine the number of factors to be extracted is "a rule-of thumb...known either as the Kaiser or eigenvalue criterion" (Kim & Mueller, 1978a, p. 49) in which factors with eigenvalues equal to or greater than 1 are retained. Retention of more than three factors was contra-indicated because interpretation based on a greater number of factors revealed one or more very specific factors, in addition to common factors, on which only a one, two or three items loaded. The decision to retain three common factors based on the hypothesis that three common factors reflecting affective, cognitive and behavioral intent components was further supported by application of the Cattell (cited in Kim & Mueller, 1978a, 1978b) scree test in which one is directed to:

> Examine the graph of eigenvalues, and stop factoring at the point where the eigenvalues begin to level off forming a straight line with an almost horizontal slope. Beyond this point Cattell describes the smooth slope as 'factorial litter or scree' (where scree is the geological term referring to the debris which collects on the lower part of a rocky slope. (1978b, p. 44)

Obtained eigenvalues rounded to two decimal places for factors 1 to 7 were 17.17, 1.83, 1.45, 1.31, 1.27, 1.11 and 1.05 respectively. When graphed, the obtained eigenvalues began to level of and form a straight line after the 3rd factor.

2. Kim and Mueller (1978b) defined an eigenvalue as "a mathematical property of a matrix; used in relation to the decomposition of a covariance matrix, both as a criterion of determining the number of factors to extract and a measure of variance accounted for by a given dimension" (p. 83). However, the meaning of the eigenvalues associated with unrotated and rotated factors differs to the extent that:

> In initial factoring, the magnitude of descending values of eigenvalues tells us something about the relative importance of each factor. This is not true for the rotated solution. Once different dimensions are separated out through rotation, it is not crucial to know how much variance in the data as a whole each explains. (p.77)

3. Kim and Mueller (1978b) stated that:

> The sign [of the factor loadings] itself has no intrinsic meaning, and in no way should it be used to asses the magnitude of the relationship between the variable and the factor. However, signs for variables for a given factor have a specific meaning relative to the signs for other variables; the different signs simply mean that the variables are related to that factor in opposite directions. For this reason, it is advisable to code the variables in the same direction before factor analyzing them. (p. 77)

4. Exploratory analysis is mainly used to ascertain the minimum number of underlying hypothetical factors that account for the observed covariations (Kim & Mueller, 1978a), but it "is often associated with ambiguities inherent in the subjective post hoc interpretation of

factors" (Breckler, 1984, p. 1194). Confirmatory factor analysis is used to confirm a hypothesis (Kim & Mueller, 1978a). At one extreme, a hypothesis may merely be the specification of the number of underlying common factors. At the other extreme, "(a) the number of common factors, (b) the nature of the relationship among factors--either orthogonal or oblique, and (c) the magnitude of factor loadings for each variable" (Kim & Mueller, 1978b, p. 55) are specified. Whether the data deviate significantly from the hypothesized structure is evaluated, thus the model's goodness of fit to the data is tested.

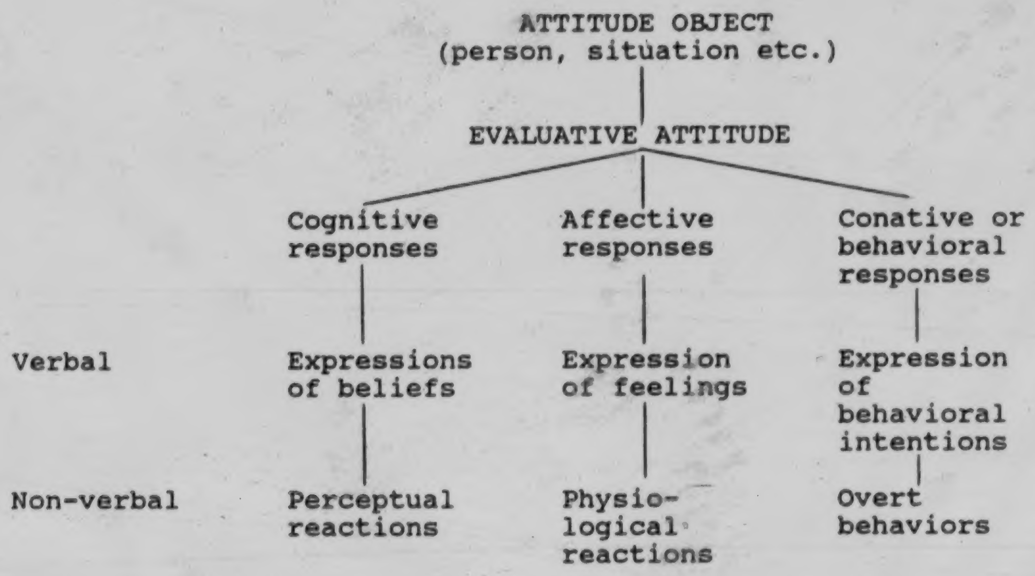
ATTITUDE OBJECT
(person, situation etc.)
EVALUATIVE ATTITUDE
Cognitive responses
Affective responses
Conative or behavioral responses
Verbal
Expressions of beliefs
Expression of feelings
Expression of behavioral intentions
Non-verbal
Perceptual reactions
Physiological reactions
Overt behaviors

FIGURE 1. Schematic of the hierarchical model of attitude supported by Ajzen (1988), based on Rosenberg and Hovland's (1960) analysis.

TABLE 1. Frequency of assignment of items to attitudinal components by judges.

Item	Component A	Component B	Component C
1. I would be ashamed to be seen with a kid who stutters.	8	0	0
2. I would avoid kids who stutter.	0	8	0[c]
3. I would study with a kid who stutters.	0	8	0
4. Kids who stutter don't want to go to parties.	0	0	8
5. Making friends with kids who stutter would be hard.	4	0	4[a]
6. I would like having a kid who stutters live next door to me.	8	0	0
7. I would walk in the hall with a kid who stutters.	0	8	0
8. Kids who stutter are weird.	0	0	8
9. Kids who stutter are like normal kids.	0	0	8
10. I would really like to make friends with a kid who stutters.	6	2	0[a]
11. I would introduce a kid who stutters to my friends.	0	8	0
12. Kids who stutter are easy to get along with.	0	0	8
13. Kids who stutter are nervous.	0	0	8
14. I would stick up for a kid who stutters.	0	8	0
15. Kids who stutter are loners.	0	0	8
16. I would like to do a school project with a kid who stutters.	5	3	0[b]
17. Its okay to laugh at kids who sutter.	1	0	7
18. I would not play inside my house with a kid who stutters.	0	8	0
19. I would be happy to have a friend who stutters.	8	0	0[c]
20. I would be afraid of kids who stutter.	7	1	0[c]
21. I would walk home with a kid who stutters.	0	8	0
22. Kids who stutter aren't smart.	0	0	8[d]
23. I would like to sit beside a kid who stutters.	7	1	0
24. Kids who stutter shouldn't play games that involve talking.	0	0	8
25. I would not go to the store with a kid who stutters.	0	8	0
26. Kids who stutter shouldn't talk for their group in class.	0	0	8[d]
27. Kids who stutter are annoying.	5	0	3[a]
28. Talking with kids who stutter would be frustrating.	6	0	2[b]
29. I would go to the movies with a kid who stutters.	0	8	0

30. Kids who stutter can be good friends.	0	8	0
31. I would invite a kid who stutters to my birthday party.	0	8	0
32. I would not do homework with a kid who stutters.	0	8	0
33. I would be embarrassed if a kid stuttered in front of a cashier.	8	0	0
34. Kids who stutter should not make speeches.	0	0	8[e]
35. I wouldn't know what to say to a kid who stutters.	6	2	0[c]
36. I would let a kid who stutters hang out with us.	0	8	0
37. Listening to kids who stutter would bother me.	7	0	1[g]
38. Kids who stutter are boring.	7	0	1[d]
39. I would play with a kid who stutters.	0	8	0[f]
40. I would go bicycle riding with a kid who stutters.	0	8	0[f]
41. Kids who stutter are unfriendly.	1	0	7[e]
42. I would like having a kid who stutters in my class.	8	0	0
43. Kids who stutter feel sorry for themselves.	0	0	8
44. I would be best friends with a kid who stutters.	1	7	0
45. I would be embarrassed if a kid was stuttering.	8	0	0[g]
46. I would enjoy being with a kid who stutters.	8	0	0
47. I would go to the playground with a kid who stutters.	0	8	0[f]
48. Kids who stutter need too much help to do things.	0	0	8[g]
49. I would invite a kid who stutters to my house.	0	8	0[f]
50. Kids who stutter are interesting.	2	0	6[a]
51. Kids who stutter are fun to be with.	2	0	6[a]
52. I would be nervous around kids who stutter.	8	0	0[g]
53. I would sit with a kid who stutters on the bus.	0	8	0
54. I would like a kid who stutters to talk for my group in glass.	6	1	1
55. Kids who stutter want lots of attention.	0	0	8
56. I would play with a kid who stutters at recess.	0	8	0
57. I would feel sorry for a kid who stutters.	8	0	0
58. I would be eager to talk to a kid who stutters.	7	0	1

59. I would really like to help kids who stutter.	6	1	1[g]
60. I would feel foolish if a kid stuttered in front of my parents.	8	0	0
61. I would feel uptight talking to kids who stutter.	8	0	0[g]

Note. A = affective; B = behavioral intentions; C = cognitive.
[a] Items were discarded. [b] Items were retained and revised to more clearly reflect the affective component. [c] This item was retained without revision to balance positive and negative items within the affective component. [d] This item was discarded on the basis of raters' comments regarding possible interpretation. [e] Items were revised to make them positive. [f] Items were revised to make them negative. [g] Revisions were made which did not affect membership to the attitudinal component to which the items had been assigned.

TABLE 2. Summary of chi-square tests for significance of modal component in classification of items to attitudinal components.

Observed Frequencies	df	cv	X^2
7:1:0	2	7.82*	8.17
6:1:1	2	5.99**	6.26
6:2:0	2	5.99	4.36
5:3:0	2	5.99	2.10

*p=.02. **p=.05

TABLE 3. Rank ordered item-total score correlations for pilot scale items.

ITEM	SUB-SCALE	ITEM-TOTAL SCORE r
34. I would not do homework with a kid who stutters.	B-	.8682*
27. I would not go to the store with a kid who stutters.	B-	.8560*
25. I would like to sit beside a kid who stutters.	A+	.8151*
44. I would be best friends with a kid who stutters.	B+	.8117*
45. I would be embarrassed to be with a kid who stutters.	A-	.8025*
47. I would not go to the playground with a kid who stutters.	B-	.8013*
54. I would play with a kid who stutters at recess.	B+	.7576*
22. I would walk home with a kid who stutters.	B+	.7464*
48. I would sit with a kid who stutters on the bus.	B+	.7435*
32. I would be frustrated listening to a kid who stutters.	A-	.7427*
19. I would not play inside my house with a kid who stutters.	B-	.7420*
20. I would be happy to have a kid who stutters for a friend.	A+	.7344*
33. I would invite a kid who stutters to my birthday party.	B+	.7226*

10. I would introduce a kid who stutters to my friends.	B+	.7216*
30. I would feel uptight talking with a kid who stutters.	A-	.7064*
29. I would go to the movies with a kid who stutters.	B+	.7004*
2. I would avoid a kid who stutters.	B-	.6986*
39. Listening to a kid who stutters would annoy me.	A-	.6939*
4. Kids who stutter do not want to go to parties.	C-	.6783*
6. I would walk in the hall with a kid who stutters.	B+	.6630*
41. I would not play with a kid who stutters.	B-	.6624*
17. I would enjoy doing a class project with a kid who stutters.	A+	.6488*
36. Kids who stutter should be allowed to make speeches.	C+	.6353*
31. Kids who stutter can be good friends.	C+	.6307*
35. I would like a kid who stutters to talk for my group in class.	A+	.6305*
5. I would like having a kid who stutters live next door to me.	A+	.6264*
8. Kids who stutter are like normal kids.	C+	.6162*
9. I would feel foolish if a kid stuttered in front of my parents.	A-	.6140*
38. I would let a kid who stutters hang out with us.	B+	.6041*
37. Kids who stutter are weird.	C-	.6041*
1. I would be ashamed to be seen with a kid who stutters.	A-	.5881*

12. Kids who stutter are easy to get along with.	C+	.5778*
14. I would be embarrassed if a kid stuttered in front of a cashier.	A-	.5774*
53. Kids who stutter should not play games that involve talking.	C-	.5701*
40. Kids who stutter are friendly.	C+	.5667*
46. I would like having a kid who stutters in my class.	A+	.5575*
11. I would not go bicycle riding with a kid who stutters.	B-	.5477*
50. Kids who stutter expect too much help to do things.	C-	.5302*
42. I would enjoy being with kid who stutters.	A+	.5234*
43. Kids who stutter feel sorry for themselves.	C-	.5093*
7. I would not know what to say to a kid who stutters.	A-	.4909*
16. Kids who stutter are loners.	C-	.4799*
21. I would be afraid of a kid who stutters.	A-	.4401**
51. I would really like to help a kid who stutters.	A+	.4380**
15. I would stick up for a kid who stutter.	B+	.4208**
3. I would study with a kid who stutters	B+	.4114**
52. I would not invite a kid who stutters to my house.	B-	.3795**
26. I would be eager to talk to a kid who stutters.	A+	.3532**
28. Kids who stutter should talk for their group in class.	C+	.3344**

24. Kids who stutter want lots of attention.	C-	.3289**
18. Its okay to laugh at kids who stutter.	C-	.3091
49. I would be nervous around a kid who stutters.	A-	.2970
23. Kids who stutter are smart.	C+	.2573
55. I would feel sorry for a kid who stutters.	A+	-.0384
13. Kids who stutter are nervous.	C-	-.0497

Note. A = affective; B = behavioral intent; C = cognitive; - = negative item; + = positive item.
*$p<.01$. **$p<.05$.

TABLE 4. Distribution of Experiment II subjects across grade, sex, age range, and contact with a person who stutters.

	Sex		Age Range	Contact	
Grade	F	M		C-Y	C-0
4	41	47	8-11	22	66
5	44	43	10-12	22	65
6	48	44	11-13	30	62
Total	133	134	8-13	74	193

Note. C-Y = Subjects who had contact with a person who stutters; C-0 = Subjects who did have contact with a persons who stutters.

TABLE 5. Ranked item-total score correlations for revised scale items grouped according to directionality.

Item	Sub-scale	r*
Positive Items		
30. I would let a kid who stutters hang out with us.	B+	.7919
25. I would invite a kid who stutters to my birthday party.	B+	.7836
38. I would sit on the bus with a kid who stutters.	B+	.7727
40. I would play at recess with a kid who stutters.	B+	.7688
15. I would be happy to have a kid who stutters for a friend.	A+	.7531
18. I would walk home with a kid who stutters.	B+	.7528
21. I would go to the movies with a kid who stutters.	B+	.7511
11. I would introduce a kid who stutters to my friends.	B+	.7491
19. I would like to sit beside a kid who stutters.	A+	.7479
28. I would like a kid who stutters to talk for my group in class.	A+	.7346
32. I would enjoy being with a kid who stutters.	A+	.7229
36. I would like having a kid who stutters in my class.	A+	.7200
34. I would be best friends with a kid who stutters.	B+	.7038
3. I would walk in the hall with a kid who stutters.	B+	.6724
8. I would enjoy doing a class project with a kid who stutters.	A+	.6365

1. I would like having a kid who stutters live next door to me.	A+	.5697
16. A kid who stutters can be a good friend.	C+	.5453
5. Kids who stutter are like normal kids.	C+	.5364
23. Kids who stutter should be allowed to make speeches.	C+	.5181
12. Kids who stutter are easy to get along with.	C+	.3959
27. Kids who stutter are friendly.	C+	.2596

Negative Items

17. I would not go to the store with a kid who stutters.	B-	.7509
31. I would not play with a kid who stutters.	B-	.7478
37. I would not go to the playground with a kid who stutters.	B-	.7369
35. I would be embarrassed to be with a kid who stutters.	A-	.7357
10. I would feel foolish if a kid stuttered in front of my parents.	A-	.7128
13. I would be embarrassed if a kid stuttered in front of a cashier.	A-	.6921
14. I would not play inside my house with a kid who stutters.	B-	.6896
7. I would not go bicycle riding with a kid who stutters.	B-	.6888
26. I would not do homework with a kid who stutters.	B-	.6811
6. I would be ashamed to be seen with a kid who stutters.	A-	.6799
29. Listening to a kid who stutters would annoy me.	A-	.6793

9.	Kids who stutter are weird.	C-	.6327
2.	I would avoid a kid who stutters.	B-	.6187
24.	I would be frustrated listening to a kid who stutters.	A-	.5724
22.	I would feel uptight talking with a kid who stutters.	A-	.5246
39.	Kids who stutter should not play games that involve talking.	C-	.5268
33.	Kids who stutter expect too much help to do things.	C-	.4127
4.	Kids who stutter do not want to go to parties.	C-	.3088
20.	Kids who stutter feel sorry for themselves.	C-	.2797

Note. A = affective; B = behavioral intent; C = cognitive; - = negative item; + = positive item.
*p=.000

TABLE 6. Descriptive statistics of the revised affective subscale.

Group	n	Range Min	Range Max	Mean	SD
F	133	1.714 -	5.000	3.666	.631
M	134	1.000 -	4.857	3.474	.771
C-0	193	1.000 -	4.857	3.481	.717
C-Y	74	2.000 -	5.000	3.803	.639
G4	88	1.571 -	4.857	3.357	.819
G5	87	1.000 -	4.929	3.744	.632
G6	92	1.643 -	5.000	3.609	.618
F4	41	1.714 -	4.786	3.415	.780
F5	44	2.571 -	4.929	3.781	.496
F6	48	2.643 -	5.000	3.777	.544
M4	47	1.571 -	4.857	3.307	.856
M5	43	1.000 -	4.857	3.706	.750
M6	44	1.643 -	4.714	3.427	.648
F4C-0	30	1.714 -	4.786	3.417	.838
F4C-Y	11	2.357 -	4.500	3.409	.632
F5C-0	29	2.571 -	4.500	3.667	.434
F5C-Y	15	3.214 -	4.929	4.000	.550
F6C-0	33	2.643 -	4.500	3.656	.519
F6C-Y	15	3.000 -	5.000	4.043	.517
M4C-0	36	1.571 -	4.786	3.171	.833
M4C-Y	11	2.000 -	4.857	3.753	.807
M5C-0	36	1.000 -	4.857	3.716	.736
M5C-Y	7	2.714 -	4.786	3.653	.882
M6C-0	29	1.643 -	4.500	3.254	.660
M6C-Y	15	2.857 -	4.714	3.762	.486

Note: Groups are defined by sex, grade, and contact, eg. F = Female, M = Male, G4 = grade 4, C-Y = subjects had contact with a person who stutters, C-0 = subjects who did not have contact with a person who stutters, F4C-0 = Females in grade 4 who did not have contact with a person who stutters, and M6C-Y = Males in grade 6 who had contact with someone who stutters. Higher scores represent more positive attitudes.

TABLE 7. Descriptive statistics of the revised cognitive subscale.

		Range			
Group	n	Min	Max	Mean	SD
F	133	2.100	5.000	3.826	.462
M	134	2.000	4.900	3.737	.553
C-0	193	2.000	4.800	3.730	.505
C-Y	74	2.600	5.000	3.915	.505
G4	88	2.100	4.900	3.568	.584
G5	87	2.000	5.000	3.922	.476
G6	92	2.400	4.700	3.851	.393
F4	41	2.100	4.400	3.537	.512
F5	44	3.200	5.000	3.970	.402
F6	48	3.300	4.700	3.940	.352
M4	47	2.200	4.900	3.596	.645
M5	43	2.000	4.600	3.872	.542
M6	44	2.400	4.700	3.755	.417
F4C-0	30	2.100	4.400	3.597	.518
F4C-Y	11	2.600	4.100	3.373	.480
F5C-0	29	3.500	4.500	3.907	.260
F5C-Y	15	3.200	5.000	4.093	.580
F6C-0	33	3.300	4.700	3.897	.367
F6C-Y	15	3.500	4.500	4.033	.306
M4C-0	36	2.200	4.800	3.483	.639
M4C-Y	11	2.900	4.900	3.964	.541
M5C-0	36	2.000	4.600	3.875	.548
M5C-Y	7	3.200	4.500	3.857	.553
M6C-0	29	2.400	4.300	3.624	.406
M6C-Y	15	3.700	4.700	4.007	.320

Note: Groups are defined by sex, grade, and contact, eg. F = Female, M = Male, G4 = grade 4, C-Y = subjects had contact with a person who stutters, C-0 = subjects who did not have contact with a person who stutters, F4C-0 = Females in grade 4 who did not have contact with a person who stutters, and M6C-Y = Males in grade 6 who had contact with someone who stutters. Higher scores represent more positive attitudes.

TABLE 8. Descriptive statistics of the revised behavioral intent subscale.

		Range			
Group	n	Min	Max	Mean	SD
F	133	1.438 -	5.000	3.899	.658
M	134	1.375 -	5.000	3.686	.811
C-0	193	1.375 -	5.000	3.690	.777
C-Y	74	2.438 -	5.000	4.059	.579
G4	88	1.375 -	4.938	3.525	.869
G5	87	1.375 -	5.000	3.958	.652
G6	92	1.750 -	5.000	3.891	.629
F4	41	1.438 -	4.813	3.579	.805
F5	44	2.250 -	5.000	4.007	.537
F6	48	3.000 -	5.000	4.074	.520
M4	47	1.375 -	4.938	3.477	.927
M5	43	1.375 -	5.000	3.907	.756
M6	44	1.750 -	4.750	3.692	.680
F4C-0	30	1.438 -	4.813	3.617	.870
F4C-Y	11	2.438 -	4.750	3.477	.620
F5C-0	29	2.250 -	4.938	3.879	.525
F5C-Y	15	3.500 -	5.000	4.254	.483
F6C-0	33	3.000 -	4.688	3.926	.510
F6C-Y	15	3.938 -	5.000	4.400	.384
M4C-0	36	1.375 -	4.875	3.321	.954
M4C-Y	11	2.750 -	4.938	3.989	.627
M5C-0	36	1.375 -	5.000	3.878	.790
M5C-Y	7	3.375 -	4.938	4.054	.576
M6C-0	29	1.750 -	4.625	3.530	.718
M6C-Y	15	3.000 -	4.750	4.004	.482

Note: Groups are defined by sex, grade, and contact, eg. F = Female, M = Male, G4 = grade 4, C-Y = subjects had contact with a person who stutters, C-0 = subjects who did not have contact with a person who stutters, F4C-0 = Females in grade 4 who did not have contact with a person who stutters, and M6C-Y = Males in grade 6 who had contact with someone who stutters. Higher scores represent more positive attitudes.

TABLE 9. Descriptive statistics of the total revised scale.

Group	n	Range		Mean	SD
		Min	Max		
F	133	2.025 -	4.825	3.799	.553
M	134	1.400 -	4.900	3.624	.698
C-0	193	1.400 -	4.750	3.627	.649
C-Y	74	2.525 -	4.900	3.933	.542
G4	88	1.775 -	4.900	3.477	.745
G5	87	1.400 -	4.800	3.874	.552
G6	92	1.875 -	4.825	3.783	.526
F4	41	2.025 -	4.700	3.511	.681
F5	44	2.750 -	4.800	3.919	.425
F6	48	30125 -	4.825	3.936	.440
M4	47	1.775 -	4.900	3.447	.803
M5	43	1.400 -	4.775	3.828	.658
M6	44	1.875 -	4.675	3.615	.565
F4C-0	30	2.025 -	4.700	3.542	.728
F4C-Y	11	2.550 -	4.500	3.427	.557
F5C-0	29	2.750 -	4.425	3.812	.358
F5C-Y	15	3.325 -	4.800	4.125	.479
F6C-0	33	3.125 -	4.625	3.824	.430
F6C-Y	15	3.575 -	4.825	4.183	.364
M4C-0	36	1.775 -	4.750	3.309	.801
M4C-Y	11	2.525 -	4.900	3.900	.654
M5C-0	36	1.400 -	4.750	3.821	.668
M5C-Y	7	3.125 -	4.775	3.864	.653
M6C-0	29	1.875 -	4.475	3.457	.583
M6C-Y	15	3.375 -	4.675	3.920	.386

Note: Groups are defined by sex, grade, and contact, eg. F = Female, M = Male, G4 = grade 4, C-Y = subjects had contact with a person who stutters, C-0 = subjects who did not have contact with a person who stutters, F4C-0 = Females in grade 4 who did not have contact with a person who stutters, and M6C-Y = Males in grade 6 who had contact with someone who stutters. Higher scores represent more positive attitudes.

TABLE 10. ANOVA of affective subscale scores.

SOURCE	SS	df	MS	F	P
Total	18.02	11	--	--	--
Sex	1.09	1	1.09	2.40	ns
Contact	4.25	1	4.25	9.32	.00251
Grade	3.61	2	1.80	3.96	.02021
Sex X Contact	.14	1	.14	.31	ns
Sex X Grade	1.39	2	.69	1.52	ns
Contact X Grade	.84	2	.42	.92	ns
Sex X Contact X Grade	1.89	2	.94	2.07	ns
Error	116.17	255	.46	--	--

TABLE 11. ANOVA of cognitive subscale scores.

SOURCE	SS	df	MS	F	P
Total	11.57	11	--	--	--
Sex	.01	1	.01	.05	ns
Contact	1.25	1	1.25	5.50	.01975
Grade	4.20	2	2.10	9.26	.00013
Sex X Contact	.78	1	.78	3.44	ns
Sex X Grade	1.63	2	.82	3.60	.02878
Contact X Grade	.30	2	.15	.66	ns
Sex X Contact X Grade	1.61	2	.80	3.54	.03054
Error	57.91	255	.23	--	--

TABLE 12. ANOVA of behavioral intent subscale scores.

SOURCE	SS	df	MS	F	P
Total	23.39	11	--	--	--
Sex	.85	1	.85	1.74	ns
Contact	5.76	1	5.76	11.80	.00069
Grade	6.75	2	3.38	6.92	.00119
Sex X Contact	.52	1	.52	1.06	ns
Sex X Grade	2.35	2	1.18	2.41	ns
Contact X Grade	.51	2	.26	.53	ns
Sex X Contact X Grade	2.31	2	1.15	2.36	ns
Error	124.40	255	.49	--	--

TABLE 13. ANOVA of total revised scale scores.

SOURCE	SS	df	MS	F	P
Total	17.72	11	--	--	--
Sex	.58	1	.58	1.65	ns
Contact	3.84	1	3.84	10.94	.00108
Grade	4.90	2	2.45	6.97	.00113
Sex X Contact	.41	1	.41	1.16	ns
Sex X Grade	1.72	2	.86	2.45	ns
Contact X Grade	.52	2	.26	.75	ns
Sex X Contact X Grade	1.91	2	.95	2.72	ns
Error	89.57	255	.35	--	--

TABLE 14. Significant Newman-Keuls' Post-hoc multiple comparisons of least square grade means.

Variable	SE	df	SNK	Req. Diff.	Obs. Diff.*
Affective					
5 vs. 4	.12	255	2.36	.29	.32
6 vs. 4	.11	255	1.99	.22	.24
Cognitive					
5 vs. 4	.09	255	2.36	.20	.33
6 vs. 4	.08	255	1.99	.16	.29
Behavioral					
5 vs. 4	.13	255	2.36	.30	.42
6 vs. 4	.12	255	1.99	.23	.36
Total					
5 vs. 4	.11	255	2.36	.25	.36
6 vs. 4	.10	255	1.99	.20	.30

Note. Req. Diff. = required difference; Obs. Diff. = observed difference.
*p=.05

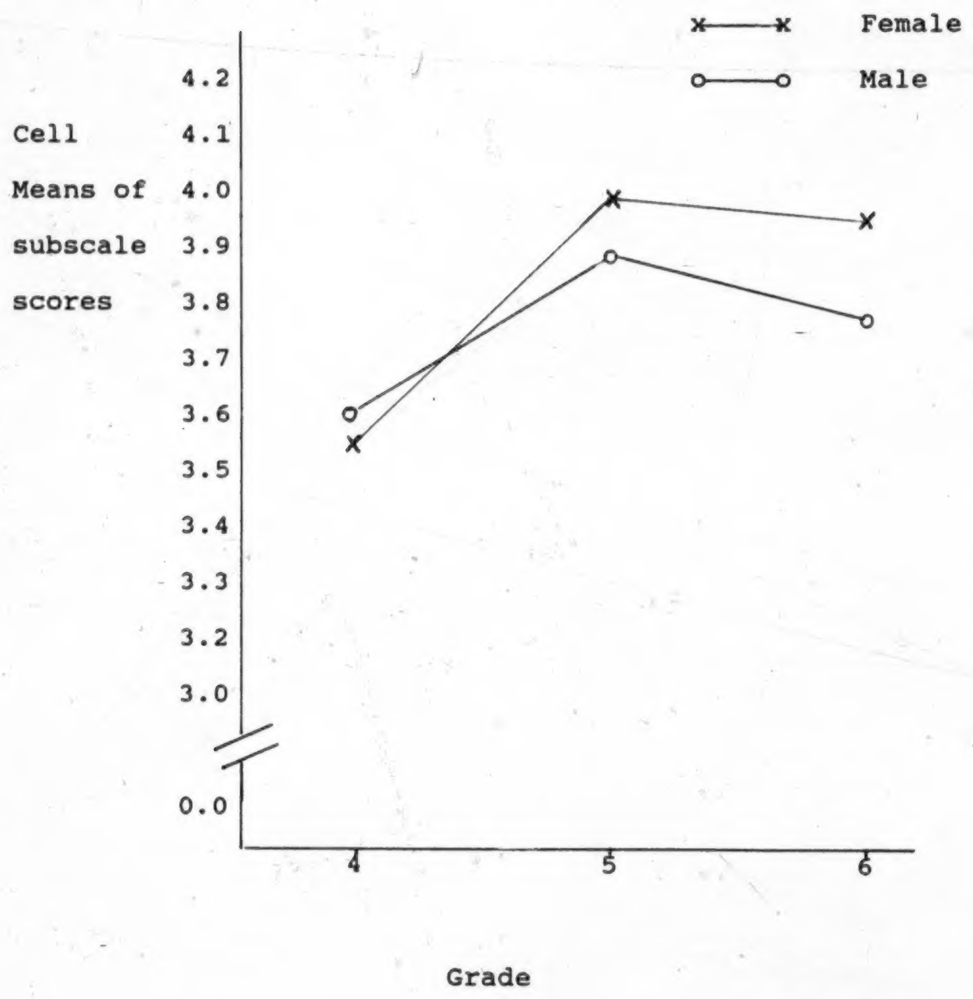

FIGURE 2. First order interaction of sex and grade on the cognitive subscale.

TABLE 15. Ranked cell and least square means for groups defined by sex and grade on the cognitive subscale.

Sex	Grade	n	Mean	SD	Lease Square Mean
F	5	44	3.970	.402	4.000
F	6	48	3.940	.352	3.965
M	5	43	3.872	.542	3.866
M	6	44	3.755	.417	3.815
M	4	47	3.596	.645	3.723
F	4	41	3.537	.512	3.485

TABLE 16. Significant Newman-Keuls' Post-hoc multiple comparisons of sex and grade least square means in first order interaction on the cognitive subscale.

Variable	SE	df	SNK	Req. Diff.	Obs. Diff.*
F5 vs. F4	.11	255	2.87	.33	.50
F6 vs. F4	.11	255	2.75	.31	.48
M5 vs. F4	.13	255	2.59	.34	.38
M6 vs. F4	.11	255	2.36	.27	.34
M4 vs. F4	.12	255	1.99	.23	.24

Note. Groups are defined by sex and grade, eg. F5 = females in grade 5 and M4 = males in grade 4.
*p=.05

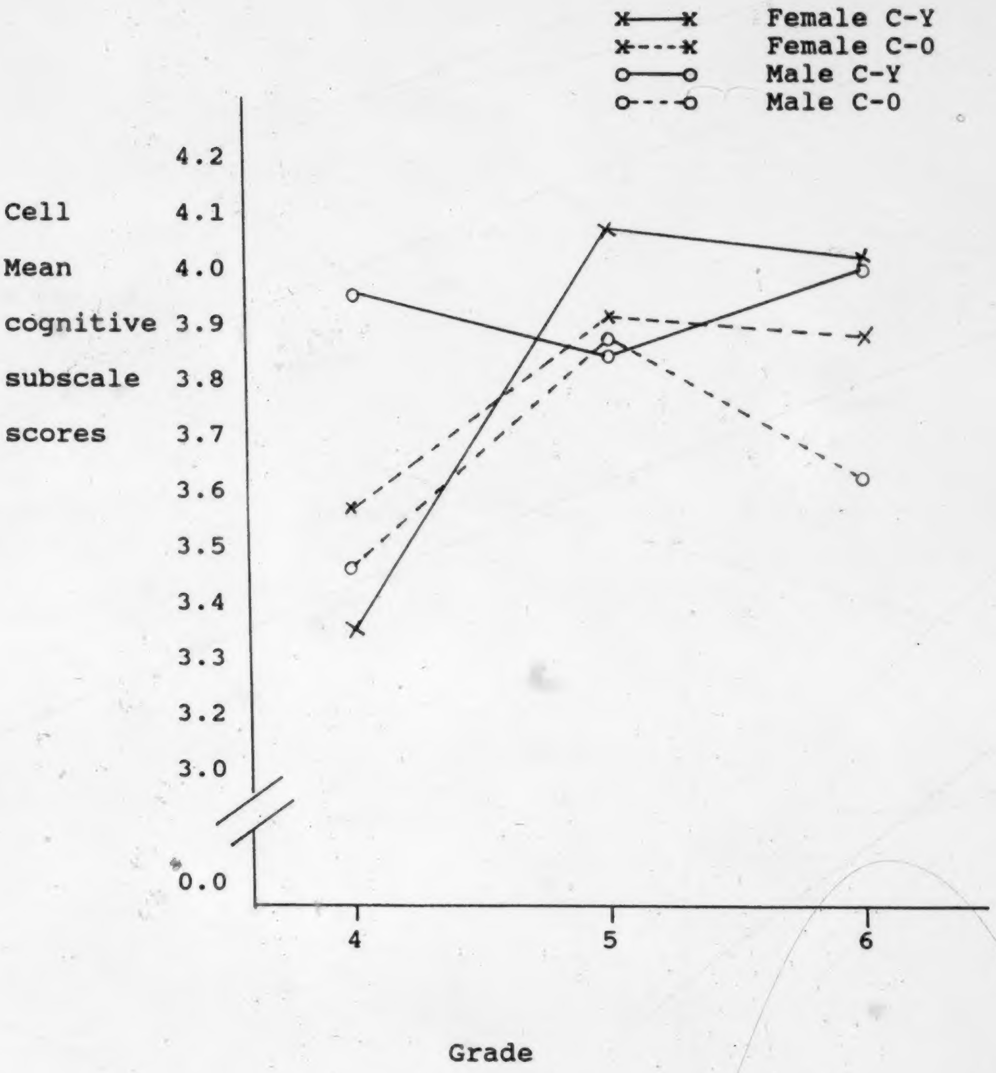

FIGURE 3. Second order interaction of sex, contact, and grade on the cognitive subscale. _Note_. C-Y = had contact with a person who stutters. C-0 = did not have contact with a person who stutters.

TABLE 17. Ranked means for groups defined by sex, grade and contact on the cognitive subscale.

Sex	Grade	Contact	n	Mean	SD
F	5	C-Y	15	4.093	.580
F	6	C-Y	15	4.033	.306
M	6	C-Y	15	4.007	.320
M	4	C-Y	11	3.964	.541
F	5	C-0	29	3.907	.260
M	5	C-0	36	3.875	.548
F	6	C-0	33	3.897	.367
M	5	C-Y	7	3.857	.553
M	6	C-0	29	3.624	.406
F	4	C-0	30	3.597	.518
M	4	C-0	36	3.483	.639
F	4	C-Y	11	3.373	.480

Note. C-Y = subjects who had contact with someone who stutters; C-0 = subjects who did not have contact with someone who stutters.

TABLE 18. Significant Newman-Keuls' Post-hoc multiple comparisons of sex, contact and grade means in second order interaction on the cognitive subscale.

Variable	SE	df	SNK	Req. Diff.	Obs. Diff.*
F5C-Y vs.F4C-Y	.19	255	3.30	.62	.72
F4C-0	.15	255	3.19	.48	.50
M4C-0	.15	255	3.25	.48	.61
F6C-Y vs.F4C-Y	.19	255	3.25	.61	.66
M4C-0	.15	255	3.19	.47	.55
M6C-0	.15	255	3.13	.47	.47
M6C-Y vs.F4C-Y	.19	255	3.19	.60	.63
M4C-0	.15	255	3.13	.46	.52
F5C-0 vs.F4C-Y	.17	255	3.06	.52	.53
M4C-0	.12	255	2.97	.35	.42
F6C-0 vs.F4C-Y	.17	255	2.97	.49	.52
M4C-0	.11	255	2.87	.33	.41
M5C-0 vs.F4C-Y	.16	255	2.87	.47	.50
M4C-0	.11	255	2.75	.31	.39

Note. Groups are defined by sex, grade and contact, eg. F5C-Y = Females in grade five who had contact with someone who stutters and M4C-0 = males in grade five who did not have contact with someone who stutters.
*p=.05

TABLE 19. Results of principal components analysis.

FACTOR	EIGENVALUE	PERCENT OF VARIANCE	CUMULATIVE PERCENT OF VARIANCE
1	17.17055	42.9	42.9
2	1.83443	4.6	47.5
3	1.44454	3.6	51.1

TABLE 20. Factor structure matrix after oblimin rotation reflecting correlations of items, grouped by subscale, with factors.

			Factors	
SUBSCALE	ITEM	F1	F2	F3
A	1	.60003	-.15356	-.35089
A	6	-.56699	.35735	.69762
A	8	.69628	-.23644	-.22505
A	10	-.58821	.51182	.60298
A	13	-.59841	.57021	.39535
A	15	.80516	-.29388	-.33146
A	19	.77120	-.35441	-.34293
A	22	-.41564	.58853	.20860
A	24	-.45823	.67229	.16787
A	28	.75527	-.34836	-.31971
A	29	-.56654	.68663	.29405
A	32	.74727	-.37617	-.27542
A	35	-.68160	.60561	.27104
A	36	.77855	-.34342	-.19050
B	2	-.58970	.31175	.39991
B	3	.67722	-.23036	-.47008
B	7	-.62976	.30135	.59577
B	11	.72958	-.38982	-.44640
B	14	-.60453	.40442	.60089
B	17	-.70203	.46950	.45646
B	18	.72385	-.43369	-.43393
B	21	.69856	-.39935	-.55527
B	25	.72982	-.48347	-.49005
B	26	-.58733	.54377	.42670
B	30	.78227	-.39189	-.48183
B	31	-.65506	.50735	.54020
B	34	.70462	-.40344	-.28681
B	37	-.68816	.48877	.42130
B	38	.76084	-.46991	-.34129
B	40	.76413	-.47353	-.29802
C	4	-.13395	.15291	.66790
C	5	.48683	-.16395	-.53209
C	9	-.50281	.38646	.66360
C	12	.47004	.00647	-.10554
C	16	.59567	-.09040	-.29373
C	20	-.06472	.61650	.19844
C	23	.50503	-.30215	-.19500
C	27	.38653	.12440	.09878
C	33	-.22177	.62045	.27314
C	39	-.39837	.51585	.36252

Note. A = affective; B = behavioral intent; C= cognitive.

TABLE 21. Matrix of correlations among factors after oblimin rotation.

Factors	F1	F2	F3
F1	1.00000	---	---
F2	-.35541	1.00000	---
F3	-.37356	.32504	1.00000

TABLE 22. Assignment of items to factors.

		Factor Loading		
ITEM NO./STATEMENT	SUB-SCALE	F1	F2	F3
15. I would be happy to have a kid who stutters for a friend.	A+	.80516		
30. I would let a kid who stutters hang out with us.	B+	.78227		
36. I would like having a kid who stutters in my class.	A+	.77855		
19. I would like to sit beside a kid who stutters.	A+	.77120		
40. I would play at recess with a kid who stutters.	B+	.76413		
38. I would sit on the bus with a kid who stutters.	B+	.76084		
28. I would like a kid who stutters to talk for my group in class.	A+	.75527		
32. I would enjoy being with a kid who stutters.	A+	.74727		
25. I would invite a kid who stutters to my birthday party.	B+	.72982		
11. I would introduce a kid who stutters to my friends.	B+	.72958		

18. I would walk home with a kid who stutters.	B+	.72385	
34. I would be best friends with a kid who stutters.	B+	.70462	
17. I would not go to the store with a kid who stutters.	B-	.70203	
21. I would go to the movies with a kid who stutters.	B+	.69856	
8. I would enjoy doing a class project with a kid who stutters.	A+	.69628	
37. I would not go to the playground with a kid who stutters.	B-	-.68816	
35. I would be embarrassed to be with a kid who stutters.	A-	-.68160	
3. I would walk in the hall with a kid who stutters.	B+	.67722	
31. I would not play with a kid who stutters.	B-	-.65506	
7. I would not go bicycle riding with a kid who stutters.	B-	-.62976	.59577
14. I would not play inside my house with a kid who stutters.	B-	-.60453	.60089
1. I would like having a kid who stutters live next door to me.	A+	.60003	

13. I would be embarrassed if a kid stuttered in front of a cashier.	A-	-.59841	.57021
16. A kid who stutters can be a good friend.	C+	.59567	
2. I would avoid a kid who stutters.	B-	-.58970	
26. I would not do homework with a kid who stutters.	B-	-.58733	.54377
23. Kids who stutter should be allowed to make speeches.	C+	.50503	
12. Kids who stutter are easy to get along with.	C+	.47004	
27. Kids who stutter are friendly.	C+	.38653	
29. Listening to a kid who stutters would annoy me.	A-		.68663
24. I would be frustrated lisenting to a kid who stutters.	A-		.67229
33. Kids who stutter expect too much help to do things.	C-		.62045
20. Kids who stutter feel sorry for themselves.	C-		.61650
22. I would feel uptight talking with a kid who stutters.	A-		.58853

39. Kids who stutter should not play games that involve talking.	C-	.51585	
6. I would be ashamed to be seen with a kid who stutters.	A-		.69762
4. Kids who stutter do not want to go to parties.	C-		.66790
9. Kids who stutter are weird.	C-		.66360
10. I would feel foolish if a kid stuttered in front of my parents.	A-		.60298
5. Kids who stutter are like normal kids.	C+		-.53209

Note. A = affective; B = behavioral intent; C = cognitive component. + = positive item; - = negative item. Items were assigned to two factors if they loaded equally (within .05) on two factors.

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APPENDIX A

Parental Consent for Interviews of Stuttering Children

Department of Speech Pathology and Audiology
University of Alberta

DEVELOPMENT OF A QUESTIONNAIRE TO ASSESS ATTITUDES OF NON-STUTTERING PEERS TOWARD CHILDREN WHO STUTTER

The purpose of this study is to develop a questionnaire to assess attitudes of children toward children who stutter. As a participant in this study, your child will be asked questions about children who stutter. Your child's answers will help in developing a questionnaire that children readily understand.

Your child will be asked questions individually, or with a small group of other children receiving therapy or who have received therapy at the Institute for Stuttering Treatment and Research (ISTAR). Scheduling of the questioning session will be made in consultation with you so that your child's involvement will occur at a time most convenient for you and him/her. It is estimated that time required for your child to participate will be approximately twenty minutes. Group sessions will be held at the Institute for Stuttering Treatment and Research, 402, 8540-109 Street, Edmonton, Alberta, Telephone: 492-2619.

All of your child's answers will be tape-recorded but his/her answers will remain anonymous by using a number system to identify answers made by him/her. Information obtained from this study will be reported in a thesis paper that will be submitted to the University of Alberta. Results may also be used for educational purposes through scientific presentation and publication. At no time will the identity of your child be disclosed.

Should you have any questions or comments, please contact me at_________ at any time. Thank you for your consideration!

I understand: (a) the purpose and procedures of this study; (b) the extent of my child's participation in the study described above; (c) that my child may withdraw at any time prior to or during the time he/she is being interviewed; (d) that withholding consent or withdrawal by my child at any time will not jeopardize my child's relationship with ISTAR or his/her Speech-Language Pathologist in any way.

I hereby give permission for my child ________________ ________________(insert full name of child) to participate in the above study and I acknowledge receipt of a signed copy of this consent.

________________________ ____________________1990

Parent/Legal Guardian - Sign and print name

Date

________________________ ____________________1990

Witness - sign and print name

Date

____

Marilyn J. MacEachern, Graduate Student
Department of Speech Pathology & Audiology
University of Alberta
Telephone: (residence)

APPENDIX B

Interview Protocol for Interviews of Stuttering Children

I am going to ask you some questions about kids who stutter. These questions are about how you think, feel and what you would do. There are no right or wrong answers.

Cognitive

What do you think about kids who stutter.

What do other children think about kids who stutter.

What would you like other children to think about kids who stutter?

How would you describe kids who stutter? or If you had to describe a kid who stutters, what words would you use?

How would other kids describe kids who stutter?

How would you like kids to describe kids who stutter?

How do other kids get along with kids who stutter?

Affective

How do you feel about kids who stutter?

How do other kids feel about kids who stutter?

How would you like other kids to feel?

Behavioral Intentions

What kinds of things would you do with another kid who stutters.

What kinds of things would you not do with another kid who stutters.

What would other kids do with kids who stutter.

What would other kids not do with kids who stutter.

What activities do you like to do with your friends.

APPENDIX C

Parental Consent for Interviews of Non-Stuttering Children

Department of Speech Pathology and Audiology
University of Alberta

DEVELOPMENT OF A QUESTIONNAIRE TO ASSESS ATTITUDES OF NON-STUTTERING PEERS TOWARD CHILDREN WHO STUTTER

The purpose of this study is to develop a questionnaire to assess attitudes of children toward children who stutter. As a participant in this study, your child will be asked questions and complete a questionnaire after viewing a video-tape of two children who stutter. Your child's answers will help in developing a questionnaire that children readily understand. These procedures will be carried out individually or in small groups with other children of approximately the same age. Scheduling will be made in consultation with you so that your child's involvement will occur at a time most convenient for you and him/her. It is estimated that the time required for your child's participation will be approximately forty minutes.

Your child's anonymity and responses to questions will be protected in the following way: (a) a combined letter-number system will be used to identify each child participating in the study; (b) only the investigator will have access to your child's responses; and (c) completed questionnaires will be maintained in the investigator's possession. Information obtained from this study will be reported in a thesis paper that will be submitted to the University of Alberta. Results may also be used for educational purposes through scientific presentation and publication. At no time will the identity of your child be revealed in the presentation or publication of data.

Should you have any questions or comments, please contact me at 973-3902 at any time. Thank you for your consideration!

I understand (a) the purpose and procedures of this study; (b) the extent of my child's participation in the study; (c) that my child may withdraw at any time prior to or during time the he/she is being asked questions without any consequences; (d) that withholding consent or withdrawal by my child at any time will not jeopardize my child's relationship with anyone in any way. I acknowledge receipt of a signed copy of this consent.

I hereby give permission for my child ________________ ____________________ (insert full name of child) to participate in the above study.

____________________________ ____________________________,1990
Parent/Legal Guardian - Date
Sign and print name

____________________________ ____________________________, 1990
Witness - sign and print Date
name

____
Marilyn J. MacEachern, Graduate Student
Department of Speech Pathology & Audiology
University of Alberta
Telephone: (residence)

APPENDIX D

Interview Protocol for Interviews of Non-Stuttering Children

I go to University and I need your help in doing some research about stuttering.

There are no right or wrong answers and no one will know who you are or what your answers are. I'm tape recording this just so I can use the information in my research.

1. What do you think about kids who stutter. Why?

2. How would you decribe kids who stutter? Why?

3. How do you feel about kids who stutter? Why?

4. What kinds of things do you like to do with your friends at home, school, and in groups?

5. What kinds of things would you not do with kids who stutter? Why?

6. Are there some things kids who stutter should not be allowed to do? Why?

APPENDIX E

Adjective Checklist
(adapted from Sipperstein, 1980)

If you had to describe a kid who stutters to your classmates, what kinds of words would you use? Below is a list of words to help you. CIRCLE the words you would use. There are no right or wrong words. Use as many or as few words as you want. If you change your mind erase your mark completely. When you have finished, put your pencil down.

healthy
slow
sloppy
clever
alert
alright
crazy
greedy
cheerful
honest
ashamed
retarded
neat
lonely
pretty
cruel
proud
weak
bright
bored
helpful
dumb
friendly
sad
careful
glad
stupid
careless
dishonest
smart
unhappy
mean
ugly
happy
kind
sick

APPENDIX F

Parental Consent for Attitude Referents

Department of Speech Pathology and Audiology
University of Alberta

DEVELOPMENT OF A QUESTIONNAIRE TO ASSESS ATTITUDES OF NON-STUTTERING PEERS TOWARD CHILDREN WHO STUTTER

The purpose of this study is to develop a questionnaire to assess attitudes of children who do not stutter toward children who do stutter. As a participant in this study, a video-taped recording of your child that was made prior to treatment at the Institute for Stuttering Treatment and Research will be shown to children in selected classrooms in selected schools in and around the City of Edmonton.

The video-tape will be shown for approximately six minutes to each group of children participating in the study. The children will then be asked questions about children who stutter or be asked to complete a questionnaire containing written questions about children who stutter. All statements made by the children participating in this study will remain anonymous. Information obtained from this study will be reported in a thesis paper that will be submitted to the University of Alberta. Results may also be used for educational purposes through scientific presentation and publication. To protect the identity of your child, your child's name, place of residence or school, or other identifying information will not be revealed at any time.

Should you have any questions or comments, please contact me at 973-3902 at any time. Thank you for your consideration!

I understand: (a) the purpose and procedures of this study; (b) the extent of my child's participation in the study described above; (c) that I may withdraw my child's participation at any time prior to or during the course of this study; (d) that withholding consent or withdrawal of my child's participation at any time will not jeopardize my child's relationship with ISTAR in any way; and (e) that the following schools will not be used in this research project (used if applicable to exclude the schools of the attitude referent's and friends or relatives).

I hereby:

(a) give permission for my child ________________________

_________________________ (insert full name of child) to participate in the above study;

(b) authorize the Institute for Stuttering Treatment and Research to release video-taped recordings of my child that were made before my child received therapy at ISTAR. I expressly waive any and all claims against ISTAR in any manner whatsoever relating to the said video-taped recording; and

(c) acknowledge receipt of a signed copy of this consent for my records.

Dated at Edmonton, in the Province of Alberta, this ___ ________ day of ________________, 1990.

____________________________ Parent/Legal Guardian - Sign and print name	________________________, 1990 Date
____________________________ Witness - sign and print name	________________________, 1990 Date

____

Marilyn J. MacEachern, Graduate Student
Department of Speech Pathology & Audiology
University of Alberta
Telephone: 973 - 3902 (residence)

APPENDIX G

Pre-Test Protocol

I'm going to show you a video-tape of two kids who stutter and ask you some questions which you will answer aloud.

This first kid is talking about things he likes to do (video shown). This second kid is talking about how to play soccer (video shown). Now, I'm going to ask you some questions.

1. What do you think about the boy you saw on the video-tape? Why?
2. What do you think about the girl you saw on the video-tape? Why?

We now have some written work to complete. Look at the front cover of your booklet. Print your name, circle male or female, give your age, grade, and the name of your school.

I'm curious to know how many of you really know someone who stutters well. Don't answer aloud. If you really know someone who stutters well, put a check mark on the space at the top of your page then write down the name of that person.

Now, I'll give you directions for answering questions in your booklet. In the following sections there are several statements which I will read. You have to indicate how much you disagree or agree with what the statements says. There are five choices for each statement. From these choices you choose the one that is best for you. There are no right or wrong answers. Circle your best choice. Lets do some samples.

1. I would like to meet Wayne Gretzky.

STRONGLY DISAGREE	DISAGREE	NOT SURE	AGREE	STRONGLY AGREE

2. I would eat Lemons.

STRONGLY DISAGREE	DISAGREE	NOT SURE	AGREE	STRONGLY AGREE

In the next two examples you have five choices for each statement that are different from the last two.

3. I would not like to go to Fantasyland.

REALLY DISAGREE	SORT OF DISAGREE	NOT SURE	SORT OF AGREE	REALLY AGREE

4. I would go to McDonalds with a friend.

REALLY DISAGREE	SORT OF DISAGREE	NOT SURE	SORT OF AGREE	REALLY AGREE

We'll do the questionnaire now. I'll read each sentence once. Don't say your answers aloud and don't talk to each other. Don't mark ahead. I cannot answers questions. Remember there are no right or wrong answers. Answer honestly. No-one will know your answers. Turn to the next page.

Pretend that a kid who stutters is moving to your neighborhood and will be in your class. What types of activities would you do with that kid? For each activity circle one of the five choices that is best for you. Don't think too long about your answer.

1. I would invite a kid who stutters to my house.[a]

STRONGLY DISAGREE	DISAGREE	NOT SURE	AGREE	STRONGLY AGREE

2. I would go to the movies with a kid who stutters.
3. I would not play after school with a kid who stutters.
4. I would do errands for the teacher with a kid who stutters.
5. I would play at recess with a kid who stutters.
6. I would not play in class with a kid who stutters.
7. I would ask a kid who stutters to be on my team.
8. I would walk in the hall with a kid who stutters.
9. I would not do homework with a kid who stutters.
10. I would lend things to a kid who stutters.
12. I would tell a secret to a kid who stutters.
13. I would try to stay away from a kid who stutters.
14. I would stick up for a kid who stutters.
15. I would introduce a kid who stutters to my friends.

16. I wouldn't know what to say to a kid who stutters.[b]

REALLY DISAGREE	SORT OF DISAGREE	NOT SURE	SORT OF AGREE	REALLY AGREE

17. I would let a kid who stutters talk for my group in class.
18. I would not go ice-skating with a kid who stutters.
19. I would work on a class project with a kid who stutters.
20. I would play inside my house with a kid who stutters.

21. I would talk in class to a kid who stutters.
22. I would go bicycle riding with a kid who stutters.
23. I would sit next to a kid who stutters on the bus.
24. I would go on a picnic with a kid who stutters.
25. I would not eat lunch at school with a kid who stutters.
26. I would go swimming with a kid who stutters.
27. I would sit next to a kid who stutters in class.
28. I would not play games in class with a kid who stutters.
29. I would play on the same team in gym with a kid who stutters.
30. I would do school work with a kid who stutters.
31. I wouldn't walk home after school with a kid who stutters.

---

[a] Response descriptors used in item 1 were used for items to and including 15, but have been omitted in this appendix for brevity.

[b] Response descriptors used in item 17 were used for items to and inlcuding 32, but have been omitted in this appendix for brevity.

Now I need to know which choices you liked the best. Circle the number of the set of answers you liked the best.

1.	REALLY DISAGREE	SORT OF DISAGREE	NOT SURE	SORT OF AGREE	REALLY AGREE
2.	STRONGLY DISAGREE	DISAGREE	NOT SURE	AGREE	STRONGLY AGREE

APPENDIX H

Instructions to Guide Classification of Attitudinal Statements

Please read the following instructions carefully:

Attitudes can be defined as the tendency of individuals to consistently react in a positive or negative manner. Statements reflecting peer attitudes toward children who stutter express how peers tend to feel, what they tend to believe and how they intend to act (what they intend to do). Your task is to classify the following statements into those that reflect FEELINGS (F), BELIEFS (B), and the INTENTION TO ACT (I). Begin by reading carefully the definitions and examples of these three types of statements.

Feeling Statements (F)

Feeling statements reflect favourable to unfavourable emotional reactions regarding children who stutter. They should express like or dislike, emotional and physiological reactions, and feelings exemplified by the phrase "gut reaction."

Examples of feeling statements are:

I would enjoy eating lunch with a kid who stutters. (favourable)
Kids who stutter make me angry. (unfavourable)

Belief Statements (B)

Belief statements represent desirable to undesirable qualities assigned to children who stutter. They reflect values, attributes, and beliefs about children who stutter, their characteristics and their relationships to other people or things.

Kids who stutter are hardworking. (desirable)
Kids who stutter should not be elected class president. (undesirable)

Intention to Act (I)

This category includes statements representing supportive to hostile intentions toward children who stutter. Statements can be of future intention to act, or predicted behavior in hypothetical situations and should contain behavior, intention to behave, resolution to act, or a preferred course of action. Examples of statements reflecting intentions to act in a particular manner toward children who stutter are:

I would lend things to kids who stutter. (supportive)
I would not let a kid who stutters be on my team. (hostile)

CLASSIFY EACH STATEMENT BY ASSIGNING IT TO ONE OF THE FOLLOWING CATEGORIES:

FEELING STATEMENT (F),
BELIEF STATEMENT (B), or the
INTENTION TO ACT (I).

ASSIGN ONLY ONE CATEGORY TO EACH STATEMENT.

EXAMPLE:

__I__ I would not go ice skating with a kid who stutters.
__B__ Kids who stutter are dumb.

1. ___ I would be ashamed to be seen with a kid who stutters.
2. ___ I would avoid kids who stutter.
3. ___ I would study with a kid who stutters.
4. ___ Kids who stutter don't want to go to parties.
5. ___ Making friends with kids who stutter would be hard.
6. ___ I would like having a kid who stutters live next door to me.
7. ___ I would walk in the hall with a kid who stutters.
8. ___ Kids who stutter are weird.
9. ___ Kids who stutter are like normal kids.
10. ___ I would really like to make friends with a kid who stutters.
11. ___ I would introduce a kid who stutters to my friends.
12. ___ Kids who stutter are easy to get along with.
13. ___ Kids who stutter are nervous.
14. ___ I would stick up for a kid who stutters.
15. ___ Kids who stutter are loners.
16. ___ I would like to do a school project with a kid who stutters.
17. ___ Its okay to laugh at kids who stutter.
18. ___ I would not play inside my house with a kid who stutters.
19. ___ I would be happy to have a friend who stutters.
20. ___ I would be afraid of kids who stutter.
21. ___ I would walk home with a kid who stutters.
22. ___ Kids who stutter aren't smart.
23. ___ I would like to sit beside a kid who stutters.

24. ____ Kids who stutter shouldn't play games that involve talking.
25. ____ I would not go to the store with a kid who stutters.
26. ____ Kids who stutter shouldn't talk for their group in class.
27. ____ Kids who stutter are annoying.
28. ____ Talking with kids who stutter would be frustrating.
29. ____ I would go to the movies with a kid who stutters.
30. ____ Kids who stutter can be good friends.
31. ____ I would invite a kid who stutters to my birthday party.
32. ____ I would not do homework with a kid who stutters.
33. ____ I would be embarrassed if a kid stuttered in front of a cashier.
34. ____ Kids who stutter should not make speeches.
35. ____ I wouldn't know what to say to a kid who stutters.
36. ____ I would let a kid who stutters hang out with us.
37. ____ Listening to kids who stutter would bother me.
38. ____ Kids who stutter are boring.
39. ____ I would play with a kid who stutters.
40. ____ I would go bicycle riding with a kid who stutters.

41. ____ Kids who stutter are unfriendly.
42. ____ I would like having a kid who stutters in my class.
43. ____ Kids who stutter feel sorry for themselves.
44. ____ I would be best friends with a kid who stutters.
45. ____ I would be embarrassed if a kid was stuttering.
46. ____ I would enjoy being with a kid who stutters.
47. ____ I would go to the playground with a kid who stutters.
48. ____ Kids who stutter need too much help to do things.
49. ____ I would invite a kid who stutters to my house.
50. ____ Kids who stutter are interesting.
51. ____ Kids who stutter are fun to be with.
52. ____ I would be nervous around kids who stutter.
53. ____ I would sit with a kid who stutters on the bus.
54. ____ I would like a kid who stutters to talk for my group in class.
55. ____ Kids who stutter want lots of attention.
56. ____ I would play with a kid who stutters at recess.
57. ____ I would feel sorry for a kid who stutters.
58. ____ I would be eager to talk to a kid who stutters.
59. ____ I would really like to help kids who stutter.
60. ____ I would feel foolish if a kid stuttered in front of my parents.
61. ____ I would feel uptight talking to kids who stutter.

APPENDIX I

Pilot Attitude Scale

Training Items

Read each statement silently while I read it aloud. Then indicate how much you disagree or agree with the statement. There are five choices. Circle the choice that is best for you. There are no right or wrong answers.

1. I would eat earthworms.

STRONGLY DISAGREE   DISAGREE   NOT SURE   AGREE   STRONGLY AGREE

2. Wayne Gretzky is a great hockey player.

STRONGLY DISAGREE   DISAGREE   NOT SURE   AGREE   STRONGLY AGREE

3. I would enjoy playing soccer.

STRONGLY DISAGREE   DISAGREE   NOT SURE   AGREE   STRONGLY AGREE

4. I would not go to Fantsyland.

STRONGLY DISAGREE   DISAGREE   NOT SURE   AGREE   STRONGLY AGREE

Do you know very well someone who stutters? ______________

That person's name is ______________________________

Pilot Scale Items

Read each statement silently while I read it aloud. Indicate how much you disagree or agree with the statement. There are five choices. Circle the choice that is best for you. There are no right or wrong answers.

1. I would be ashamed to be seen with a kid who stutters.[a]

STRONGLY DISAGREE	DISAGREE	NOT SURE	AGREE	STRONGLY AGREE

2. I would avoid a kid who stutters.
3. I would study with a kid who stutters.
4. Kids who stutter do not want to go to parties.
5. I would like having a kid who stutters live next door to me.
6. I would walk in the hall with a kid who stutters.
7. I would not know what to say to a kid who stutters.
8. Kids who stutter are like normal kids.
9. I would feel foolish if a kid stuttered in front of my parents.
10. I would introduce a kid who stutters to my friends.
11. I would not go bicycle riding with a kid who stutters.
12. Kids who stutter are easy to get along with.
13. Kids who stutter are nervous.
14. I would be embarrassed if a kid stuttered in front of a cashier.
15. I would stick up for a kid who stutters.
16. Kids who stutter are loners.
17. I would enjoy doing a class project with a kid who stutters.
18. Its okay to laugh at kids who stutter.
19. I would not play inside my house with a kid who stutters.
20. I would be happy to have a kid who stutters for a friend.
21. I would be afraid of a kid who stutters.
22. I would walk home with a kid who stutters.
23. Kids who stutter are smart.
24. Kids who stutter want lots of attention.
25. I would like to sit beside a kid who stutters.
26. I would be eager to talk to a kid who stutters.
27. I would not go to the store with a kid who stutters.
28. Kids who stutter should talk for their group in class.
29. I would go to the movies with a kid who stutters.
30. I would feel uptight talking with a kid who stutters.
31. Kids who stutter can be good friends.
32. I would be frustrated listening to a kid who stutters.
33. I would invite a kid who stutters to my birthday party.
34. I would not do homework with a kid who stutters.

35. I would like a kid who stutters to talk for my group in class.
36. Kids who stutter should be allowed to make speeches.
37. Kids who stutter are weird.
38. I would let a kid who stutters hang out with us.
39. Listening to a kid who stutters would annoy me.
40. Kids who stutter are friendly.
41. I would not play with a kid who stutters.
42. I would enjoy being with a kid who stutters.
43. Kids who stutter feel sorry for themselves.
44. I would be best friends with a kid who stutters.
45. I would be embarrassed to be with a kid who stutters.
46. I would like having a kid who stutters in my class.
47. I would not go to the playground with a kid who stutters.
48. I would sit with a kid who stutters on the bus.
49. I would be nervous around a kid who stutters.
50. Kids who stutter expect too much help to do things.
51. I would really like to help a kid who stutters.
52. I would not invite a kid who stutters to my house.
53. Kids who stutter should not play games that involve talking.
54. I would play with a kid who stutters at recess.
55. I would feel sorry for a kid who stutters.

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[a] For purposes of brevity, the response choices have been omitted for the remainder of items.

APPENDIX J

Protocol for Administration of Pilot and Revised Attitude Scale

I am doing some research about kids who stutter and I need your help. I will be showing you a short videotape of 2 kids who stutter, then you will complete a questionnaire. Your answers to the questionnaire are very important. It won't take long to complete.

I am going to give each of you a booklet. You will need a pencil and an eraser. Do not open the booklet until I instruct you to do so.

Print your name on the cover of your booklet.

Turn to the next page. Print the name of your school, your grade, and your age. Circle Male or Female.

Now I'll give you directions for completing the questionnaire and we will do some examples. Turn to page 3.

The directions say: Read each statement silently while I read it aloud. Then indicate how much you disagree or agree with the statement. There are five choices. Circle the choice that is best for you. There are no right or wrong answers.

Lets do some examples: Read number 1 silently while I read it aloud. It says: "I would eat earthworms." Now read the choices. They say: strongly disagree, disagree, not sure, agree, strongly agree. Now, circle your choice. Circle only one choice.

Ask subjects to give choices made and elaborate on why they made that choice. Discuss consistencies and inconsistencies.

Lets, do number 2. "Wayne Gretzky is a great hockey player." Circle your choice. Discuss choices as above.

Remember to make the choice that's best for you. Don't make a choice that you think you should make or one that you think your friends would make. Make the choice that's best for you.

Do number 3. Discuss choices as above.

Do number 4. Discuss choices as above. Point out that by choosing stongly disagree or disagree, subjects would indicate that they would go to Fantsyland. By disagreeing it means that you would go to Fantasyland.

Now put your pencils down.

Before we go on, I'm going to show you a video-tape of two kids who stutter. Counterbalance the following: The first kid is talking about things he likes to do, and the second kid is talking about playing soccer. Watch closely. Play videotape.

I am curious to know how many of you know very well someone who stutters. Please answer the question on the bottom of page 3. It says: Do you know someone very well who stutters. Emphasize that subjects should know the person well. If you do circle YES. If you don't circle NO. If you have answered yes, put the name of that person on the next line. Then if that person is a friend, relative or neighbor, circle the appropriate answer. If the person who stutters is neither of these, write in on the line where it says "Other" what that person is to you. Any questions?

Now, put your pencils down. Turn to page 4 and lets review the directions at the top. They say: "Read each statement silently while I read it aloud. Indicate how much you disagree or agree with the statement. There are five choices. Circle the choice that is best for you. There are no right or wrong answers. Remember to circle only one choice.

Answer honestly, no one will know your answers. I am the only one who will look at these questionnaires. Don't think too long about your answer. We'll be going through the statements fairly quickly. Don't say your answers aloud, look at each other's answers or talk to each other. Don't mark ahead. Stay with me. If you change your answer, erase your first choice completely.

Once we get started, I cannot answer any questions. Make your choices according to how you understand each statement and the words in it. Are there any questions now?

Read each statement aloud. After item 27 (pilot scale) or 20 (revised scale) advise subjects that they are half way through and remind them to "make the choice that is best for you".

APPENDIX K

Notice to Parents of Grades 4, 5, and 6 Students

DEVELOPMENT OF A QUESTIONNAIRE TO ASSESS PEER ATTITUDES TOWARD CHILDREN WITH SPEECH FLUENCY PROBLEMS

Research regarding development of a questionnaire to assess peer attitudes toward children who have speech fluency problems will be carried out in class on May 14, 1990 for approximately 25 minutes. A short video-tape of children who stutter will be shown, then a questionnaire will be completed.

A numeric system will be used to code completed questionnaires to ensure that students' responses are anonymous and identities remain confidential. No person other than the investigator will have access to completed questionnaires and the questionnaires will remain in the investigator's possession. The results of this research will be reported in a thesis paper that will be submitted to the University of Alberta and may also be used for educational purposes through scientific presentation and publication. At no time will the identity of participants be revealed.

This research project has been approved by the Deputy Superintendent of Schools and the principal and teachers of ____________________________. Should you have any questions or concerns, you may contact the investigator or the school principal. Your child's participation in this study may be declined by contacting the investigator or the principal, or your child may withdraw from the study at any time. Declining participation or withdrawal by your child will not affect your child's relationship with the school in any way.

Investigator:

Marilyn J. MacEachern,
Graduate Student
Dept. of Speech Pathology & Audiology
University of Alberta
Work:
Residence:
(please leave a message if necessary)

APPENDIX L

Revised Attitude Scale Items

1. I would like having a kid who stutters live next door to me.
2. I would avoid a kid who stutters.
3. I would walk in the hall with a kid who stutters.
4. Kids who stutter do not want to go to parties.
5. Kids who stutter are like normal kids.
6. I would be ashamed to be seen with a kid who stutters.
7. I would not go bicycle riding with a kid who stutters.
8. I would enjoy doing a class project with a kid who stutters.
9. Kids who stutter are weird.
10. I would feel foolish if a kid stuttered in front of my parents.
11. I would introduce a kid who stutters to my friends.
12. Kids who stutter are easy to get along with.
13. I would be embarrassed if a kid stuttered in front of a cashier.
14. I would not play inside my house with a kid who stutters.
15. I would be happy to have a kid who stutters for a friend.
16. A kid who stutters can be a good friend.
17. I would not go to the store with a kid who stutters.
18. I would walk home with a kid who stutters.
19. I would like to sit beside a kid who stutters.
20. Kids who stutter feel sorry for themselves.
21. I would go to the movies with a kid who stutters.
22. I would feel uptight talking with a kid who stutters.
23. Kids who stutter should be allowed to make speeches.
24. I would be frustrated listening to a kid who stutters.
25. I would invite a kid who stutters to my birthday party.
26. I would not do homework with a kid who stutters.
27. Kids who stutter are friendly.
28. I would like a kid who stutters to talk for my group in class.
29. Listening to a kid who stutters would annoy me.
30. I would let a kid who stutters hang out with us.
31. I would not play with a kid who stutters.
32. I would enjoy being with a kid who stutters.
33. Kids who stutter expect too much help to do things.
34. I would be best friends with a kid who stutters.
35. I would be embarrassed to be with a kid who stutters.
36. I would like having a kid who stutters in my class.
37. I would not go to the playground with a kid who stutters.
38. I would sit on the bus with a kid who stutters.
39. Kids who stutter should not play games that involve

talking.
40. I would play with at recess with a kid who stutters.

APPENDIX M

Peer Attitudes Toward Stuttering Children - Form A

(PATSC-20 Form A)

30. I would let a kid who stutters hang out with us.
17. I would not go to the store with a kid who stutters.
38. I would sit on the bus with a kid who stutters.
37. I would not go to the playground with a kid who stutters.
15. I would be happy to have a kid who stutters for a friend.
10. I would feel foolish if a kid stuttered in front of my parents.
21. I would go to the movies with a kid who stutters.
14. I would not play inside my house with a kid who stutters.
19. I would like to sit beside a kid who stutters.
26. I would not do homework with a kid who stutters.
32. I would enjoy being with a kid who stutters.
29. Listening to a kid who stutters would annoy me.
34. I would be best friends with a kid who stutters.
2. I would avoid a kid who stutters.
8. I would enjoy doing a class project with a kid who stutters.
22. I would feel uptight talking with a kid who stutters.
16. A kid who stutters can be a good friend.
33. Kids who stutter expect too much help to do things.
23. Kids who stutter should be allowed to make speeches.
20. Kids who stutter feel sorry for themselves.

APPENDIX N

Peer Attitudes Toward Stuttering Children - Form B

PATSC-20 Form B

25. I would invite a kid who stutters to my birthday party.
31. I would not play with a kid who stutters.
40. I would play with at recess with a kid who stutters.
35. I would be embarrassed to be with a kid who stutters.
18. I would walk home with a kid who stutters.
13. I would be embarrassed if a kid stuttered in front of a cashier.
11. I would introduce a kid who stutters to my friends.
7. I would not go bicycle riding with a kid who stutters.
28. I would like a kid who stutters to talk for my group in class.
6. I would be ashamed to be seen with a kid who stutters.
36. I would like having a kid who stutters in my class.
9. Kids who stutter are weird.
3. I would walk in the hall with a kid who stutters.
24. I would be frustrated listening to a kid who stutters.
1. I would like having a kid who stutters live next door to me.
39. Kids who stutter should not play games that involve talking.
5. Kids who stutter are like normal kids.
4. Kids who stutter do not want to go to parties.
12. Kids who stutter are easy to get along with.
27. Kids who stutter are friendly.